

# MISSOURI STATE EPIDEMIOLOGY PROFILE 2021



Missouri Behavioral Health Epidemiology Workgroup  
(MO-BHEW)

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## Missouri Substance Use: Key Findings

### Alcohol Use

In 2018-19, 49.4% of all Missourians aged 12 and older reported using alcohol in the past month while 24.1% reported binge drinking in the same time period.

These numbers have remained relatively steady for Missouri and US over the last decade and approximately similar to national average.

### Tobacco Use

In 2018-19, 19.6% of all Missourians aged 12 and older reported smoking cigarettes in the past month. This number remains above the national average of 16.8%.

For the last decade, Missouri has been higher than the national average for rate of deaths due to tobacco-related health consequences like lung cancer emphysema and COPD, and Cardiovascular and Ischemic Cerebrovascular Disease.

### Marijuana Use

In 2018-19, 8.8% of all Missourians aged 12 and older reported using marijuana in the past month, which has increased over the past few years.

The use is just below the national average of 9.8%.

## Missouri Mental Health: Key Findings

### Depression

In 2018-19, percentage of adults having at least one major depressive episode in the past year are typically higher in Missouri (9.6%) than nationally (7.5%). The percentage major depressive episodes in past year among Missourians is increasing since 2014.

Missouri has been higher than the national average for rate of deaths due to suicide for the last decade, and the rate continues to rise until 2018. In 2019, a slight drop in the rate of suicide is observed in Missouri and US.

### Prescription Drugs

In 2018-19, 3.4% of all Missourians aged 12 and older reported using pain relievers in a way a doctor did not prescribe them. This number is close to the national average of 3.6%. The mortality rate due to prescription drug use and drug overdose/poisoning is increasing and is higher in the state than national average.

### LGBTQ & Military

Students who identify as LGBTQ are more likely than heterosexual students to report using substances, having suicidal thoughts, and experiencing depression symptoms.

The rate of suicide among Missouri veterans is higher than civilians and US veterans. The percentage of Missouri Military Personnel Who Felt Sad/Empty/Depressed for Several Days or Longer declined in 2018-19 and is approximately similar to national average.



# Missouri

## INTRODUCTION

Missouri is located in the Midwest United States. The geography of the state is largely rural, although over half of the population clusters around two metropolitan areas. Slightly over six million people make Missouri their home making it the 18<sup>th</sup> most populated state. Approximately twenty-two percent (22.3%) of the population is under 18 years old, 54.4% are aged 19-64 and 17.3% are 65 and older. The population is primarily white (82.9%) with African Americans making up the second largest group (11.8%). Hispanics are a small group (4.4%) but growing. 4.2% of the population is foreign born and approximately 6.3% of the households speak language other than English.<sup>1</sup>

10% of the adult population do not have a high school diploma while only 18% have graduated with a bachelor's degree. Over a third (37.0%) of the population ages 16 and older are *not* in the labor force. Around thirteen percent (12.9%) of the population live in poverty. The median household income is \$55,461.<sup>1</sup>

The Missouri Department of Mental Health (DMH), Division of Behavioral Health (DBH) is the state authority responsible for developing and implementing a statewide response addressing the impact of substance use disorder on Missouri families and communities. The DBH works collaboratively with other state and local agencies to ensure that the Missouri's response is comprehensive and appropriate. In the fall 2010, DBH submitted a request for a subcontract through Synectics to the Center for Substance Abuse Prevention (CSAP), a part of the Substance Abuse and Mental Health Services Administration (SAMHSA), to increase the epidemiological capacity of the state. As a result, the state was awarded a grant and formed the Missouri Behavioral Health Epidemiology Workgroup

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<sup>1</sup> <https://www.census.gov/acs/www/data/data-tables-and-tools/data-profiles/2019/> U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates

(MO-BHEW). One of the products of the MO-BHEW is a State Epidemiological Profile. The first Profile was completed Spring 2011. The State Epidemiological Profile provides an overview of the current available data on substance use and mental health across the state, including subpopulation data where possible. In addition, it discusses available Risk and Protective Factor data for the state, data gaps that need to be addressed, and final conclusions on the condition of the state.

Since 2009, the DMH has also produced an [Annual Status Report](#) with data on alcohol and drug use across the state. The Status Report includes data from national surveys as well as available local data. This historical data collection, in combination with the indicators suggested by the federal funders, led to the choice of indicators covered throughout this report.

Lastly, MO-BHEW identified two high-risk subpopulations, lesbian, gay, bisexual, transgender, or queer (LGBTQ) individuals and military personnel. While mental health and substance use data on these subpopulations are difficult to find, what is available is presented in this report.



## Key Substance Use Measures





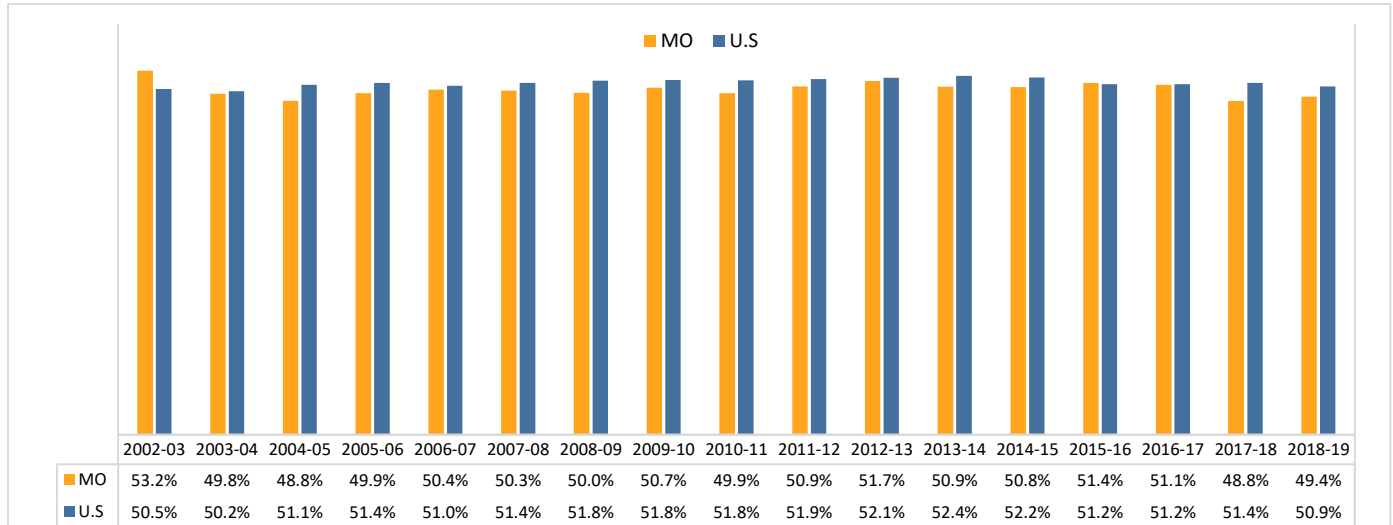
# ALCOHOL

## Alcohol Consumption

### Drinking Rates

In 2018-19, 49.4% of all Missourians aged 12 and older reported using alcohol in the past month. The past-month alcohol use in Missouri is lower than the national average of 50.9%. The state-wide and national percentages declined in 2018-19 survey cycle.

Figure 1: Estimated Past-Month Alcohol Use (%): U.S. and Missouri Ages 12 and Older, 2002-2019.



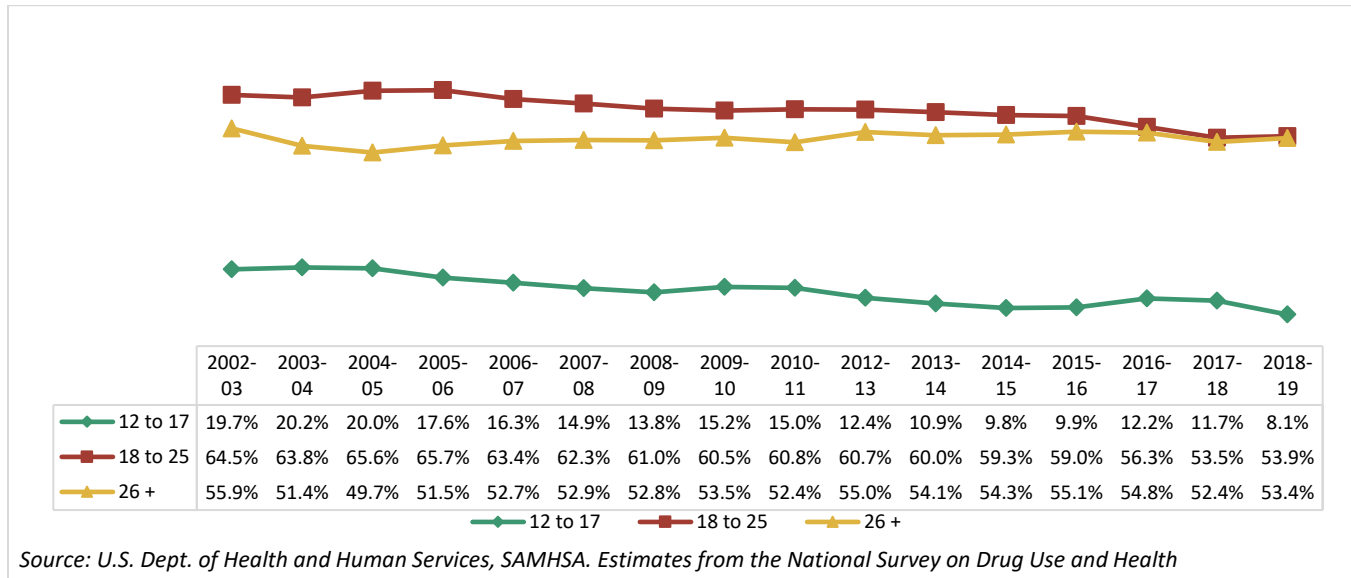
Source: U.S. Dept. of Health and Human Services, SAMHSA. Estimates from the National Survey on Drug Use and Health

## Age of First Use

Approximately 8% (8.1%) of Missourians aged 12-17 years reported drinking alcohol in the last month, compared to 53.9% of 18-25-year-old and 53.4% in the 26+ age group.

Those in the 18-25-year-old age group are most likely to have reported drinking in the past month although the gap between the adult groups has been decreasing.

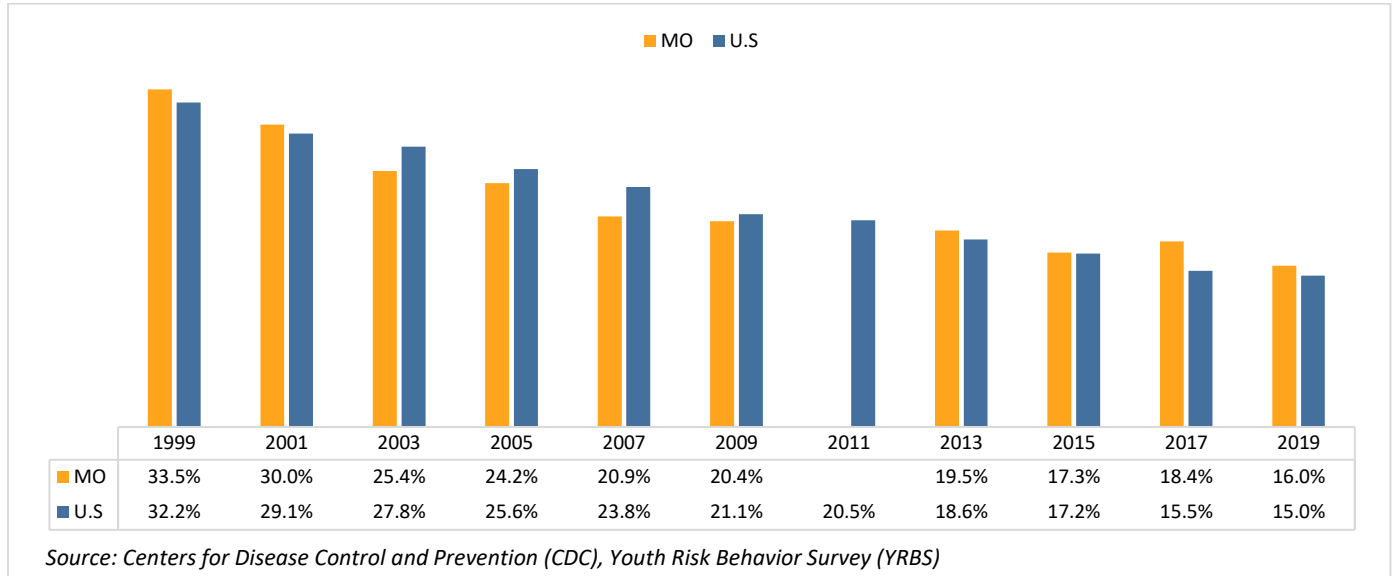
Figure 2: Estimated Past-Month Alcohol Use (%): In Missouri by Age Group, 2002-2019.



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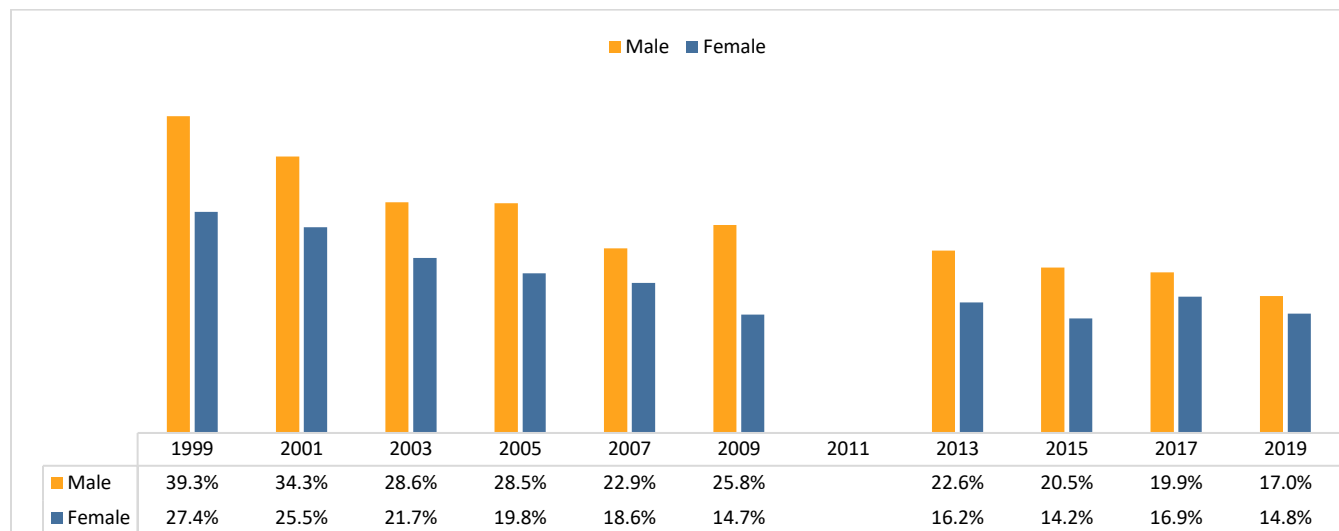
In 2019, less than one in five (16%) of all Missouri high school students reported having their first drink of alcohol before the age of 13. This percentage has been decreasing over the last decade and is comparable to the U.S average of 15%. Missouri data for 2011 is not available.

Figure 3: % Students in 9-12 Grades Reporting First Use of Alcohol Before Age 13, U.S. and Missouri, 1999-2019.



In Missouri, males consistently report a higher percentage of drinking before age 13 than females. In 2019, the percentage of males initiating drinking before age 13 was 17% compared to 14.8% for females.

Figure 4: % Students in 9-12 Grades Reporting First Use of Alcohol Before Age 13: In Missouri by Gender, 1999-2019.



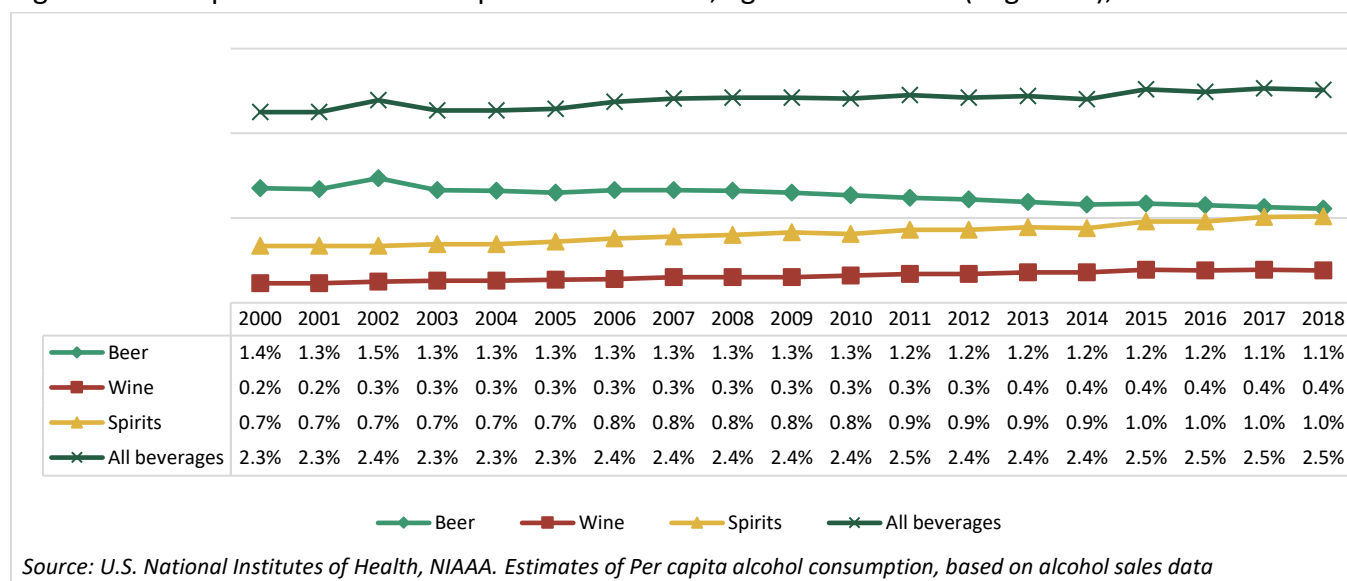
Source: Centers for Disease Control and Prevention (CDC), Youth Risk Behavior Survey (YRBS)

## Per Capita Ethanol Consumption

Per Capita data should be interpreted cautiously – it may not be sensitive in identifying areas where a high prevalence of heavy use is also seen with high rates of abstinence. The overall pattern of per capita ethanol consumption for Missouri is similar to that of the nation as a whole.<sup>2</sup>

Beer has the highest consumption rate for the state and the gap between beer and spirits has been decreasing.

Figure 5: Per capita ethanol consumption for Missouri, ages 14 and older (in gallons), 2000-2018.



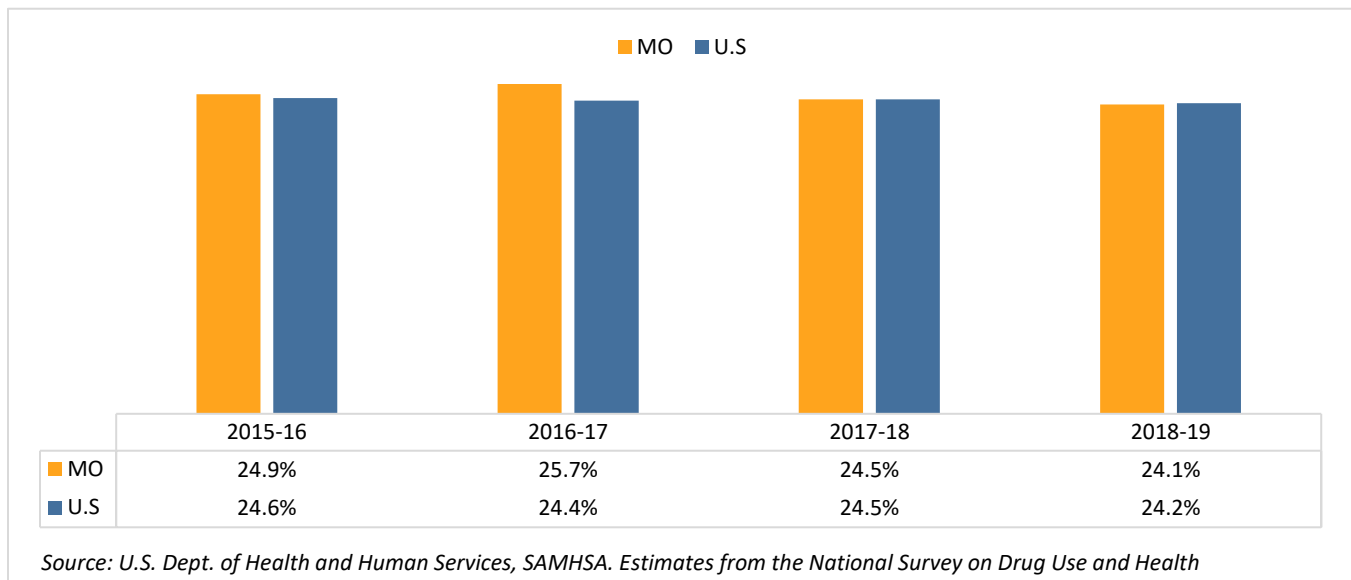
<sup>2</sup> [https://pubs.niaaa.nih.gov/publications/surveillance115/tab4-3\\_18.htm](https://pubs.niaaa.nih.gov/publications/surveillance115/tab4-3_18.htm)

## Binge Drinking

In 2015, the National Survey on Drug Use and Health (NSDUH) increased the threshold for determining binge alcohol use for females from 5+ drinks on one occasion to 4+ drinks on one occasion. Therefore, data from before 2015 are not comparable to current data. To review data prior to 2015, please refer to the [2017 Missouri Epidemiological Profile](#).

In 2018-19, 24.1% of Missourians aged 12 and older reported binge drinking in the past month. This is the similar to the national average (24.2%).

Figure 6: Estimated Past-Month Binge Drinking (%): U.S. and Missouri Ages 12 and Older, 2015-2019.

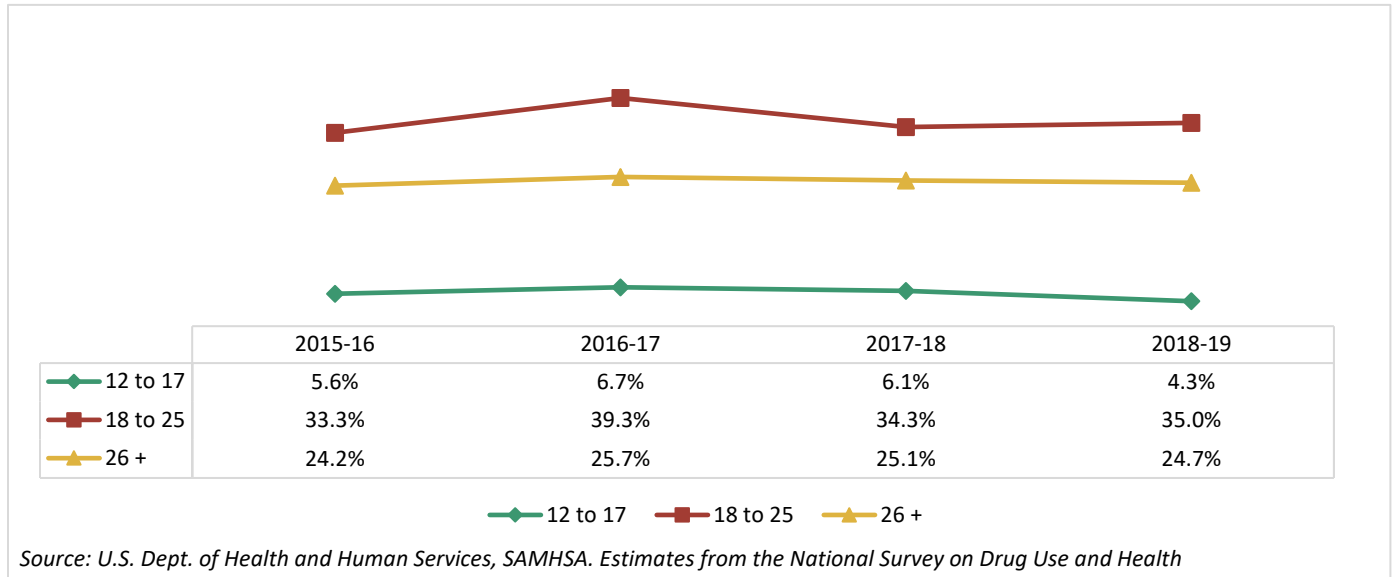




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In 2018-19, 4.3% of Missourians aged 12-17 reported binge drinking in the last month. This compares to 35.0% of the 18–25-year-old and 24.7% in the 26+ age group. As seen with overall drinking rates, those in the 18–25-year-old age group are also most likely to report binge drinking in the past month.

Figure 7: Estimated Past-Month Binge Drinking (%): In Missouri by Age Group, 2015-2019.



When comparing the percentage of people who reported any drinking to those who reported binge drinking in past month, it becomes clear that binge drinking is a concern, especially among youth and younger adults.

Table 1: Comparison of 30 Day and Binge Drinking in Missouri, 2018-2019.

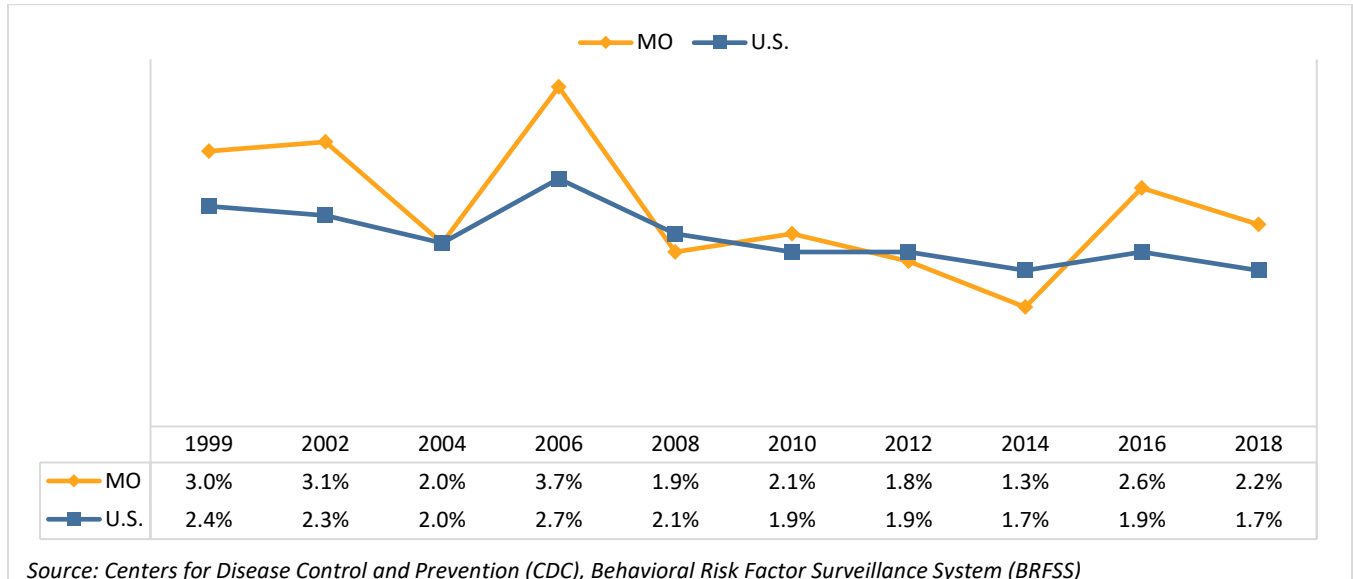
Age Group	% of Sample Reporting 30 day Use	% of Sample Reporting Binging in the last 30 days
12-17	8.1%	4.3%
18-25	53.9%	35.0%
26+	53.4%	24.7%

Source: U.S. Dept. of Health and Human Services, SAMHSA. Estimates from the National Survey on Drug Use and Health.

## Drinking and Driving

In 2018, 2.2% of Missourians reported at least one episode of alcohol impaired driving in the past 30 days. This is more than the national average of 1.7%. The gap between Missouri and USA began to rise in 2016.

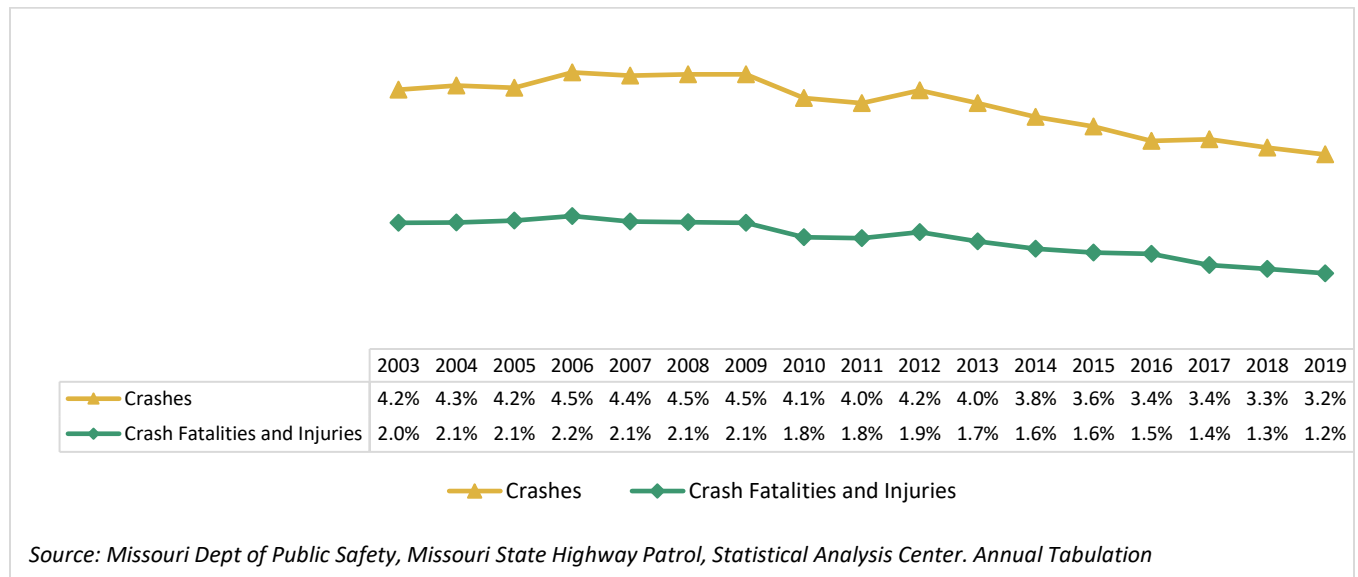
Figure 8: % of Adults Aged 18+ Reporting at Least One Episode of Alcohol Impaired Driving in the Past 30 Days: U.S. and Missouri, 1999-2018.



Alcohol Consequences**Traffic Crashes**

Total traffic crashes in Missouri were on the decline, falling from 182,748 in 2003 to 141,081 in 2015. Since 2015, the numbers have been increasing and was 157,038 in 2019. The percentage of crashes that were caused by alcohol-impaired drivers have declined slightly over the last decade. The percentage of crashes that were caused by alcohol-impaired drivers that resulted in fatalities or injuries have also decreased over the last decade.

Figure 9: % of Missouri Highway Safety Burden Caused by Alcohol-Impaired Drivers, 2000-2019.



## Mortality Rates

Missouri has been lower than the national average for rate of deaths due to cirrhosis (chronic liver disease) for the last decade. When looking at rates by demographics, men and Whites are more likely to die due to cirrhosis. Over the last decade, homicide rates have been higher in Missouri than the national average. When looking at the rates by demographics, men and African Americans are much more likely to die due to homicide.

Figure 10: Rate of All Cirrhosis Deaths per 100,000 Pop: U.S. and Missouri, 1998-2019.

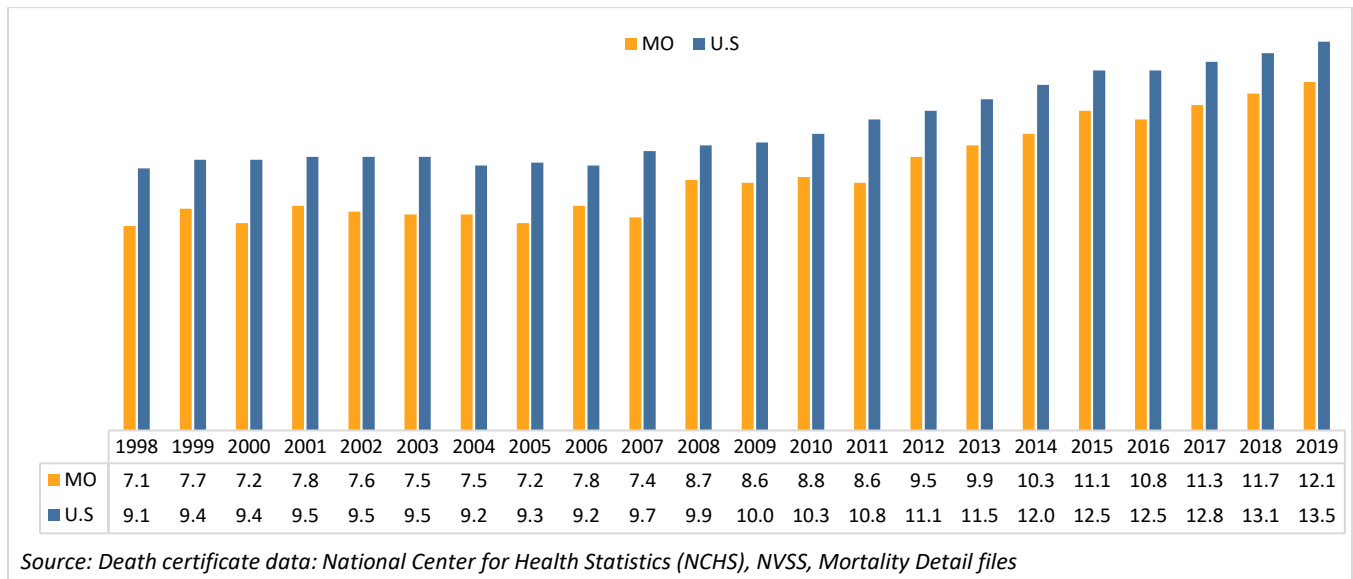
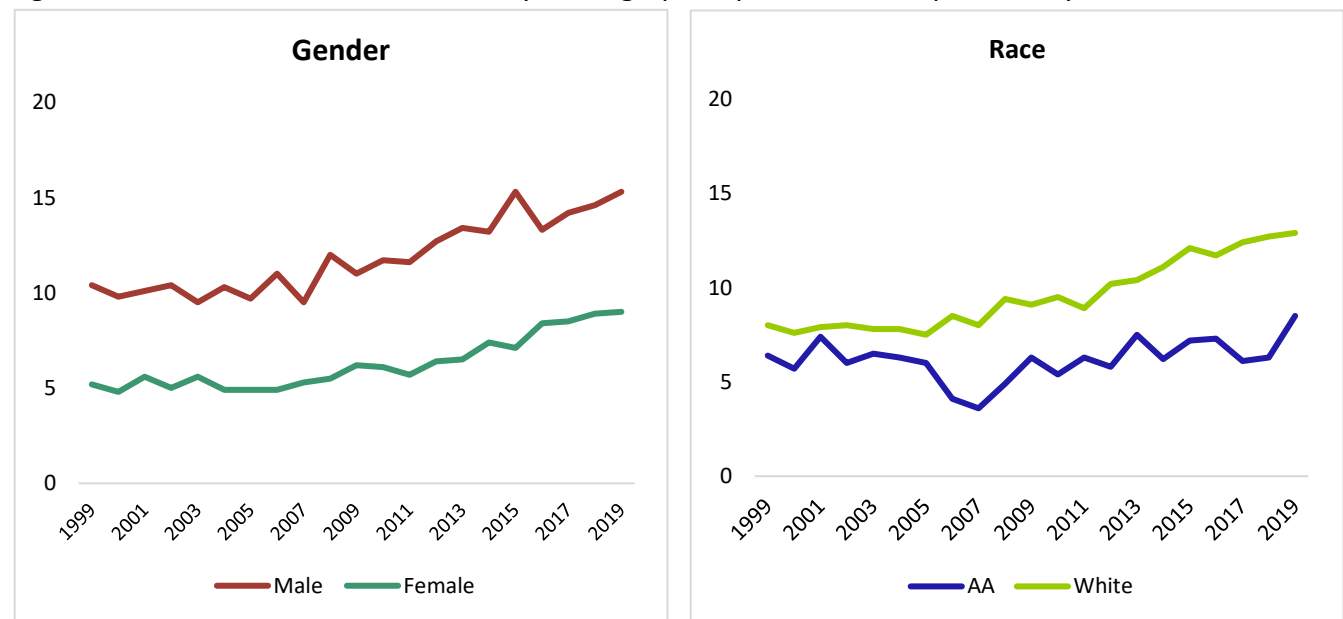


Figure 11: Rate of All Cirrhosis Deaths by Demographics per 100,000 Pop: MO only, 1998-2019.



Source: National Center for Health Statistics. Underlying Cause of Death 1999-2019 on CDC WONDER Online

# STATE EPIDEMIOLOGY PROFILE- 2020

Figure 12: Rate of Homicides per 100,000 Population: U.S. and Missouri, 1998-2019.

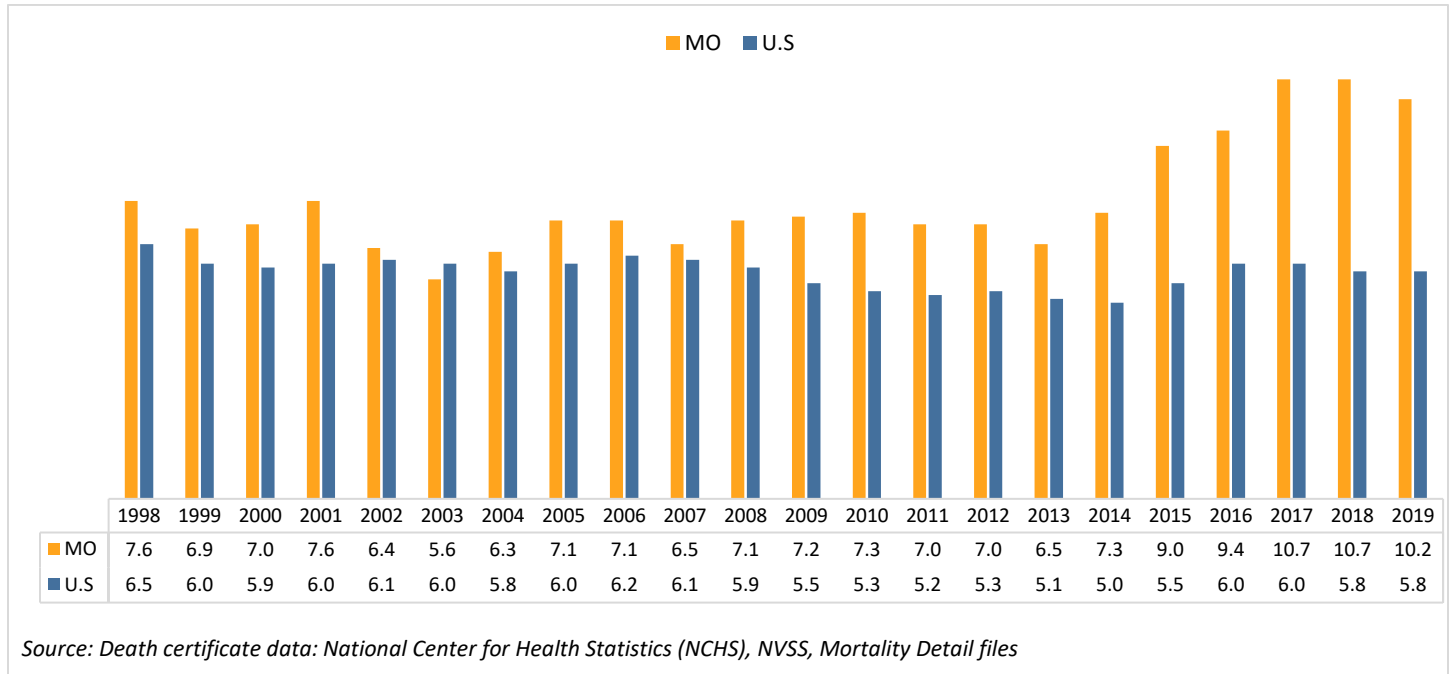
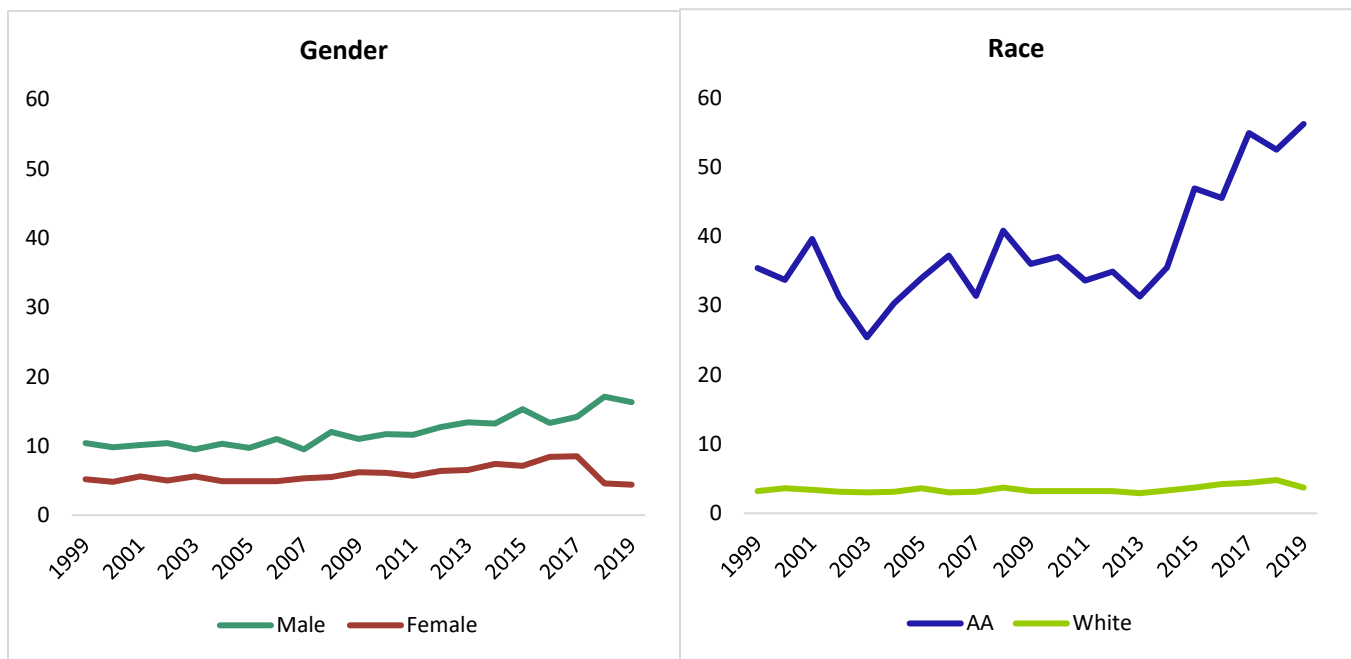


Figure 13: Rate of Homicides by Demographics per 100,000 Pop: MO only, 1998-2019.



Source: National Center for Health Statistics. Underlying Cause of Death 1999-2019 on CDC WONDER Online

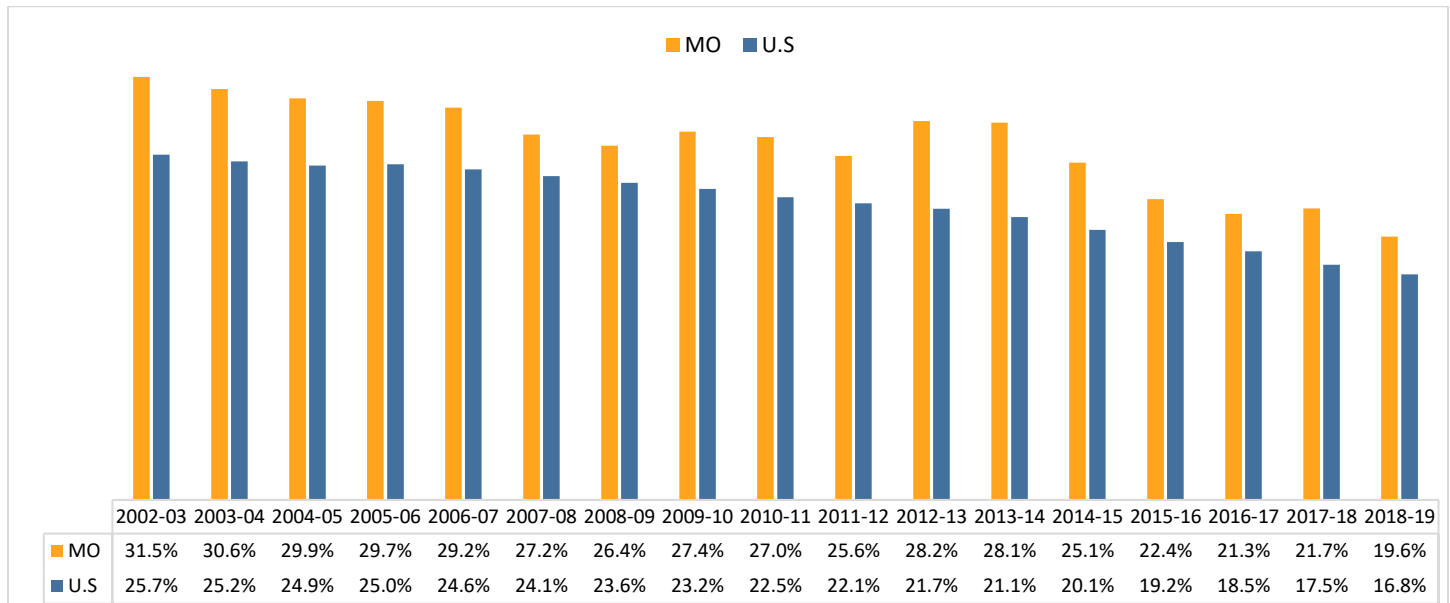


# TOBACCO

## Tobacco Rates

In 2018-19, 19.6% of all Missourians aged 12 and older reported smoking cigarettes in the past month. This number is above the national average of 16.8%. The past-month cigarette use has declined nationally and in Missouri.

Figure 14: Estimated Past-Month Cigarette Use (%): U.S. and Missouri Ages 12 and Older, 2002-2019.



Source: U.S. Dept. of Health and Human Services, SAMHSA. Estimates from the National Survey on Drug Use and Health

## STATE EPIDEMIOLOGY PROFILE- 2020

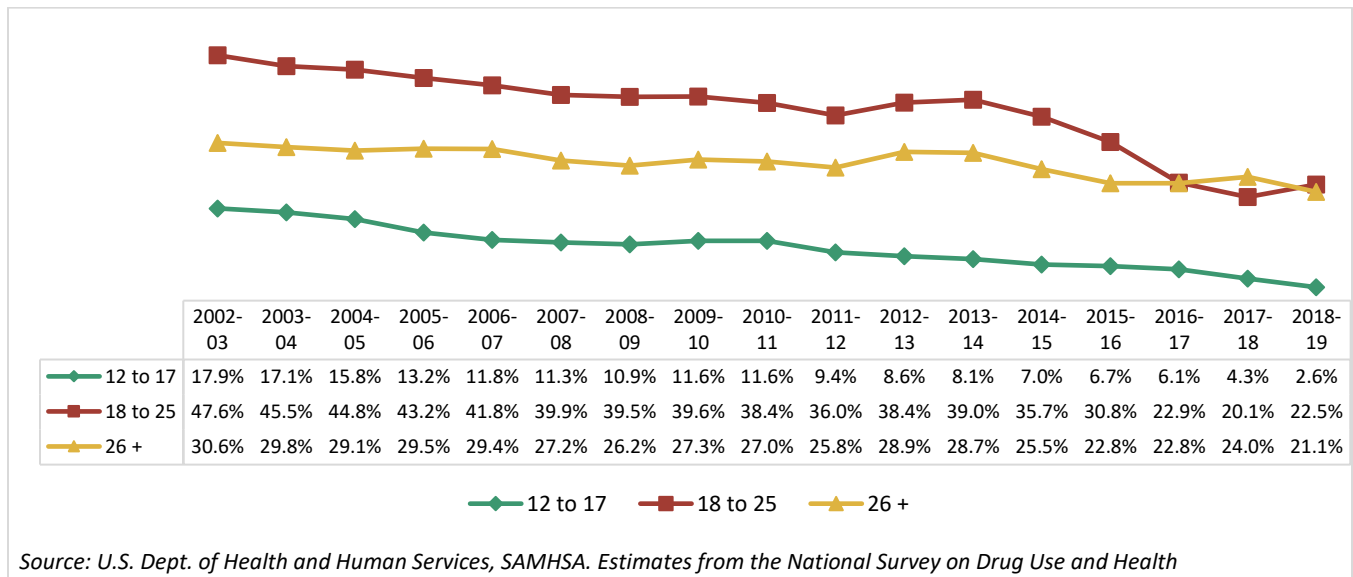
NSDUH collects information on how long ago the participant used cigarettes. The question asked (IRCGRRC) since 2002 is worded as-

*"Cigarette Recency (1= Within the past 30 days; 2= More than 30 days ago but within the past 12 mos.; 3= More than 12 months ago but within the past 3 yrs; 4= More than 3 years ago; 9= NEVER SMOKED CIGARETTES)."*

Using this information, we studied the trends in past-month cigarette use.

In 2018-19, 2.6% of Missourians aged 12-17 years reported smoking cigarettes in the past month. This compares to 22.5% of 18-25-year-old and 21.1% in the 26+ age group. Past-month cigarette smoking among 18-25-year-old populations was declining since 2013-15 but increased in 2018-19. On the contrary, the past-month cigarette use among those aged 26 and older declined 2018-19.

Figure 15: Estimated Past-Month Cigarette Use (%) in Missouri, By Age Group, 2002-2019.



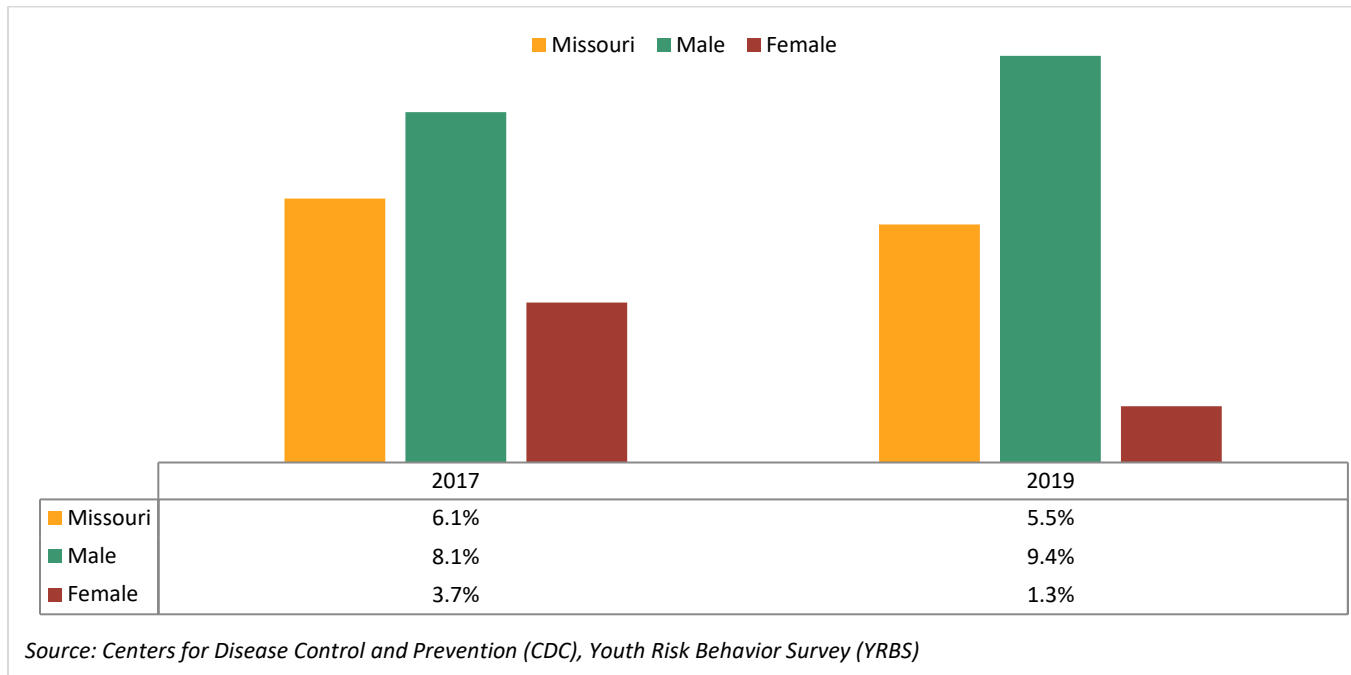


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In 2017, YRBS made changes to survey questions on past-month smokeless tobacco use. Therefore, data prior to 2017 are no longer comparable to current data. To review data prior to 2017, refer to the [2017 Missouri Epidemiological Profile](#).

The percentage use of smokeless tobacco among Missouri males is higher than the state average. There is a gap among male and female as well- males are more likely to report using smokeless tobacco in the last month than females.

Figure 16: Estimated Past-Month Smokeless Tobacco Use (%) in Missouri, By Gender, 1999-2019.

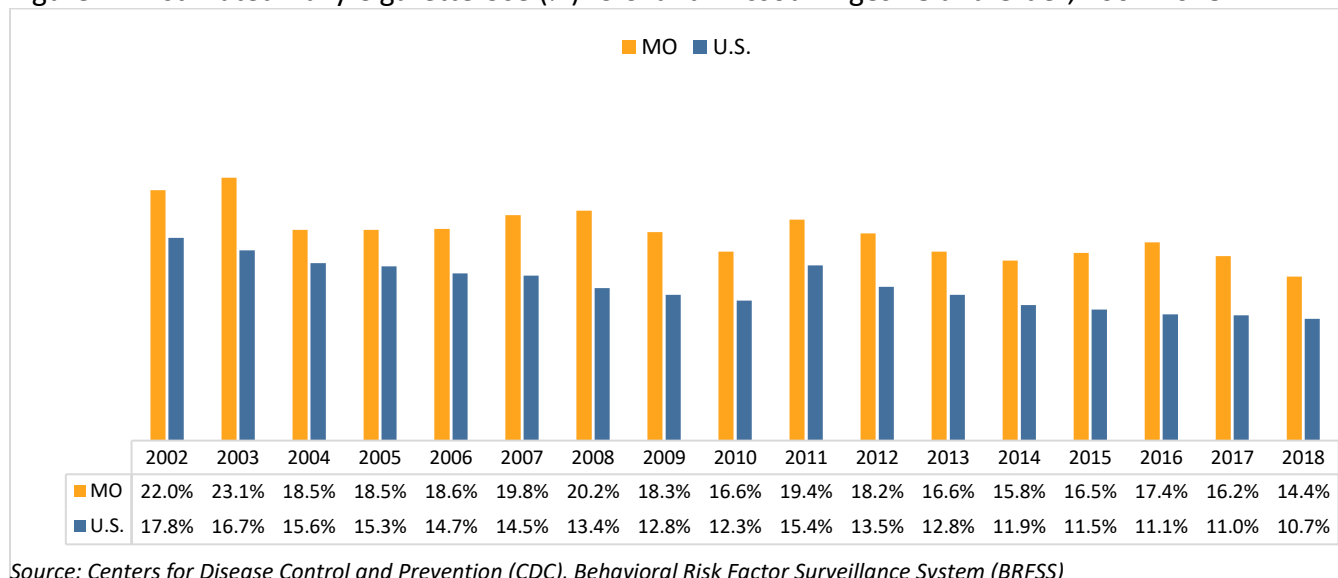


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## Daily Use

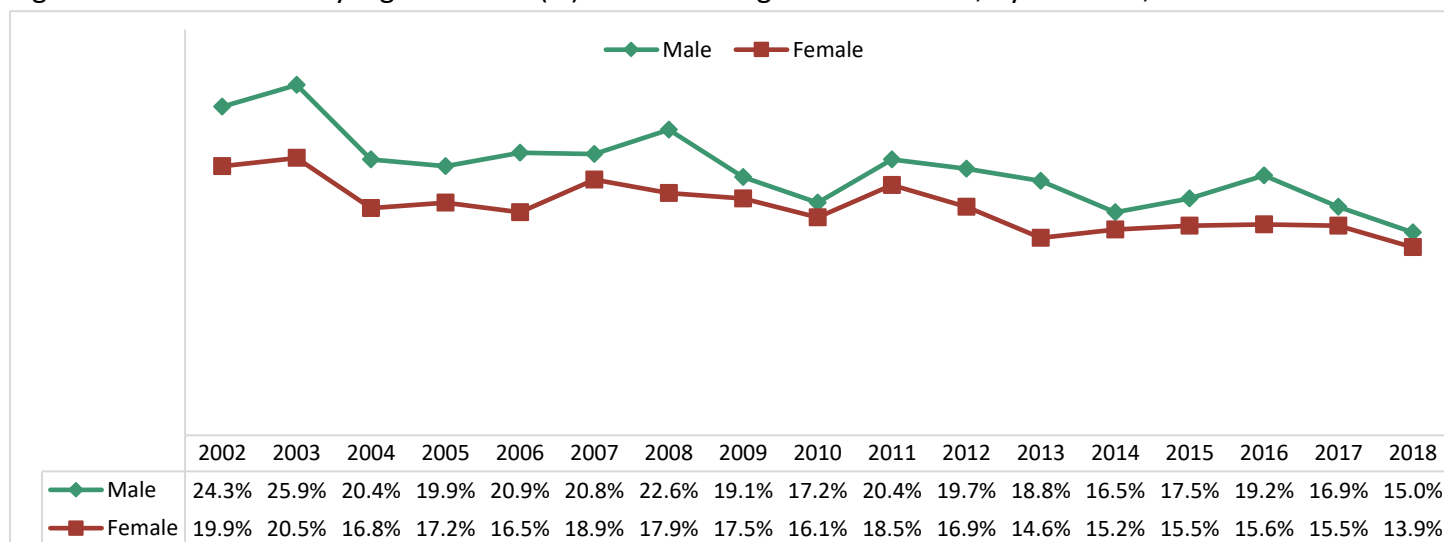
In 2018, 14.4% of all Missourians aged 18 and older reported using smoking cigarettes daily in the past month. This is a number that is above the national average of 10.7%. Males were slightly more likely than females to report daily smoking.

Figure 17: Estimated Daily Cigarette Use (%): U.S. and Missouri Ages 18 and Older, 2002-2018.



Source: Centers for Disease Control and Prevention (CDC), Behavioral Risk Factor Surveillance System (BRFSS)

Figure 18: Estimated Daily Cigarette Use (%) in Missouri Ages 18 and Older, By Gender\*, 2002-2018.

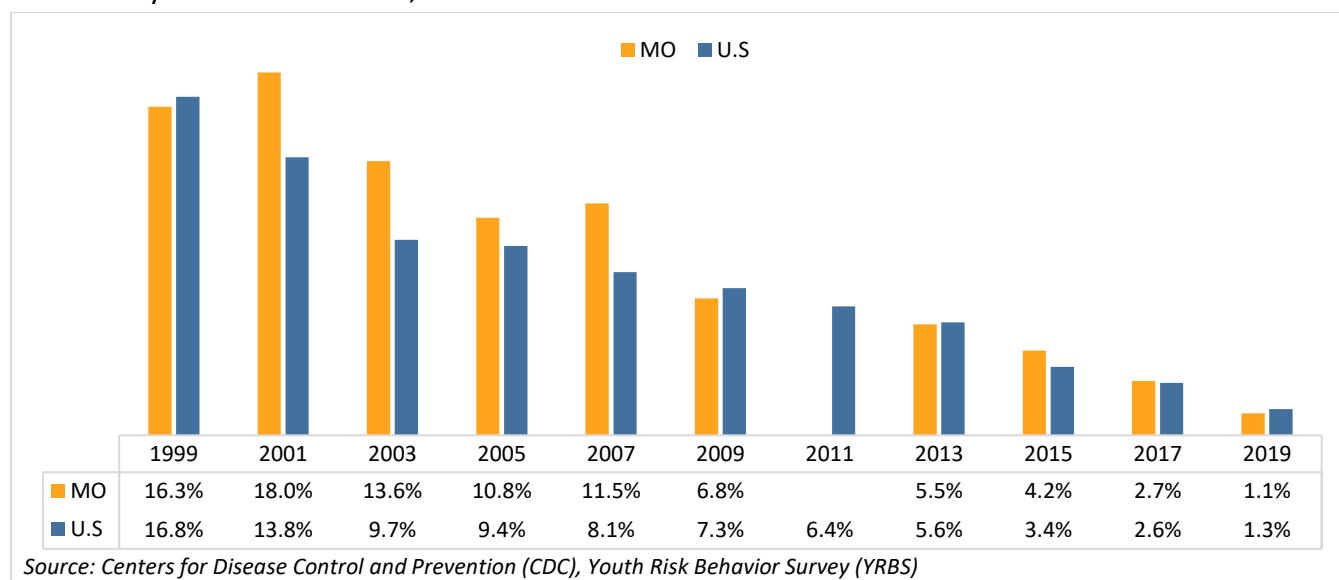


Source: Centers for Disease Control and Prevention (CDC), Behavioral Risk Factor Surveillance System (BRFSS)

\* "Gender" in 2018 is categorized to include four groups- Male, Female, Don't know/Not sure, and Refused. Before 2018, "Gender" was categorized into two groups- Male and Female.

When looking at high school students only, Missouri is close to national average for smoking cigarettes on 20 or more days of the past month since 2009. Missouri data for 2011 are not available.

Figure 19: % of Students in 9-12 Grade Reporting Smoking Cigarettes on 20 or More Days within the Past 30 Days: U.S and Missouri, 1999-2019.



## Age of First Use

In 2019, 9.3% of all Missouri students currently in high school reported using tobacco before the age of 13. This percentage has been above the national average and has been decreasing over the last decade. Males typically reported a higher percentage of tobacco use before age 13 than females. In 2017, the male percentage was 10.0% compared to 8.3% for females. Missouri data for 2011 are not available.

Figure 20: % Students in 9-12 Grades Reporting First Use of Cigarettes Before Age 13, U.S. and Missouri, 1999-2019.

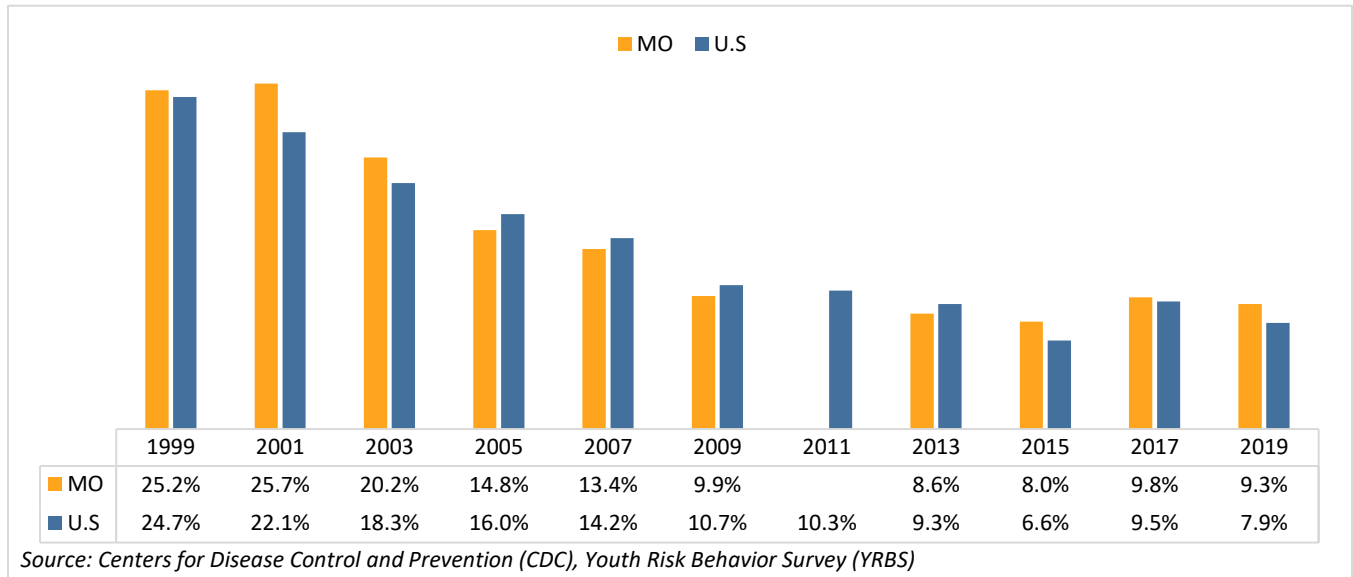
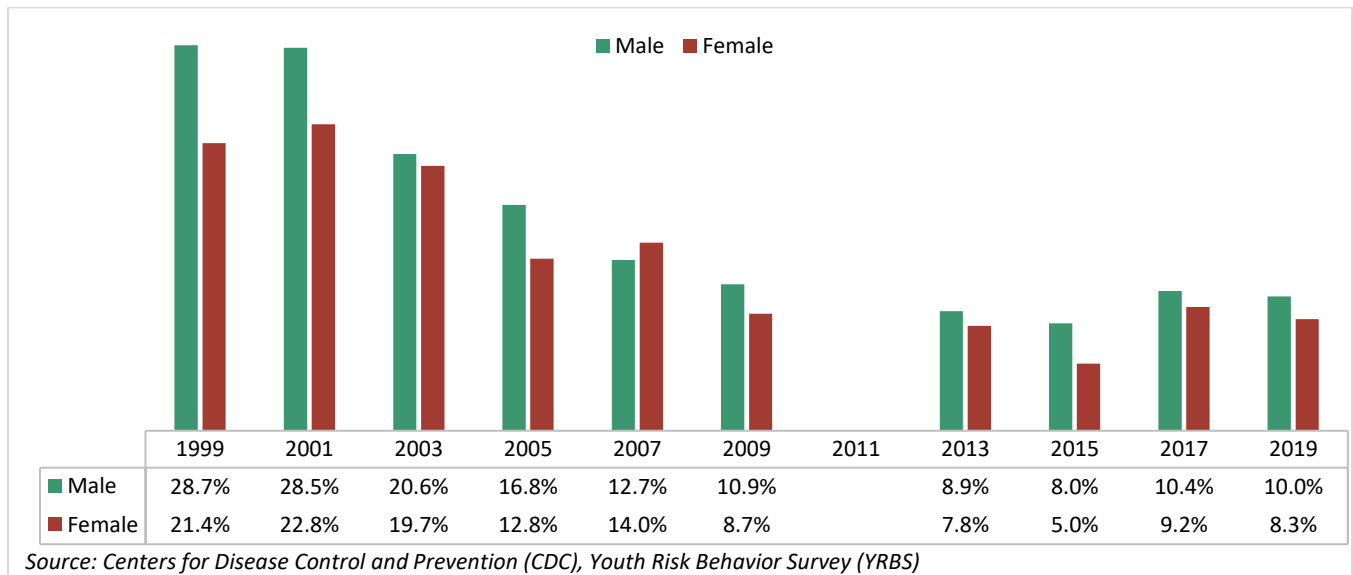


Figure 21: % Students in 9-12 Grades Reporting First Use of Cigarettes Before Age 13 in Missouri, By Gender, 1999-2019.

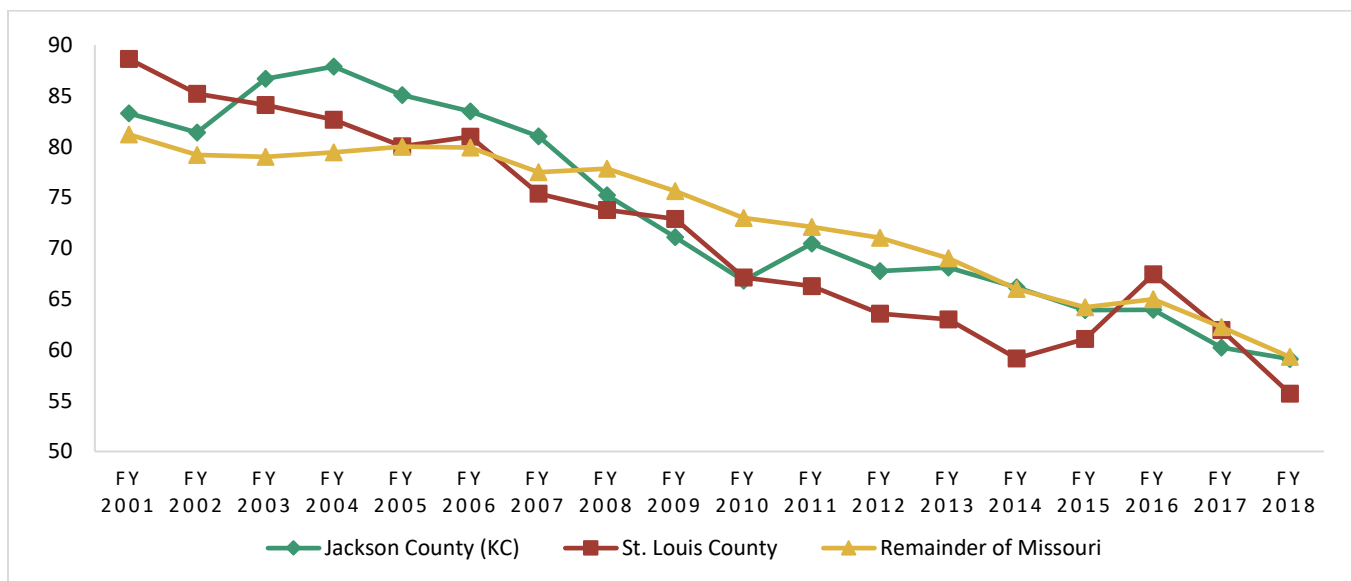


### Per Capita Cigarette Consumption

Per Capita Cigarette consumption data should be interpreted cautiously – it may not be sensitive in identifying areas where a high prevalence of heavy use is also seen with high rates of abstinence.

Cigarettes sold per capita seem to indicate higher smoking rates in rural areas than in the major cities, although this number is declining. In 2018, Jackson County rates have been very similar to the remainder of Missouri. Overall, the rates for all three regions have been approximately similar since 2015.

Figure 22: Packs of Cigarettes Per Capita Sold in Missouri Based on Cigarette Tax Revenues, by county, Fiscal Years 2001-2018.



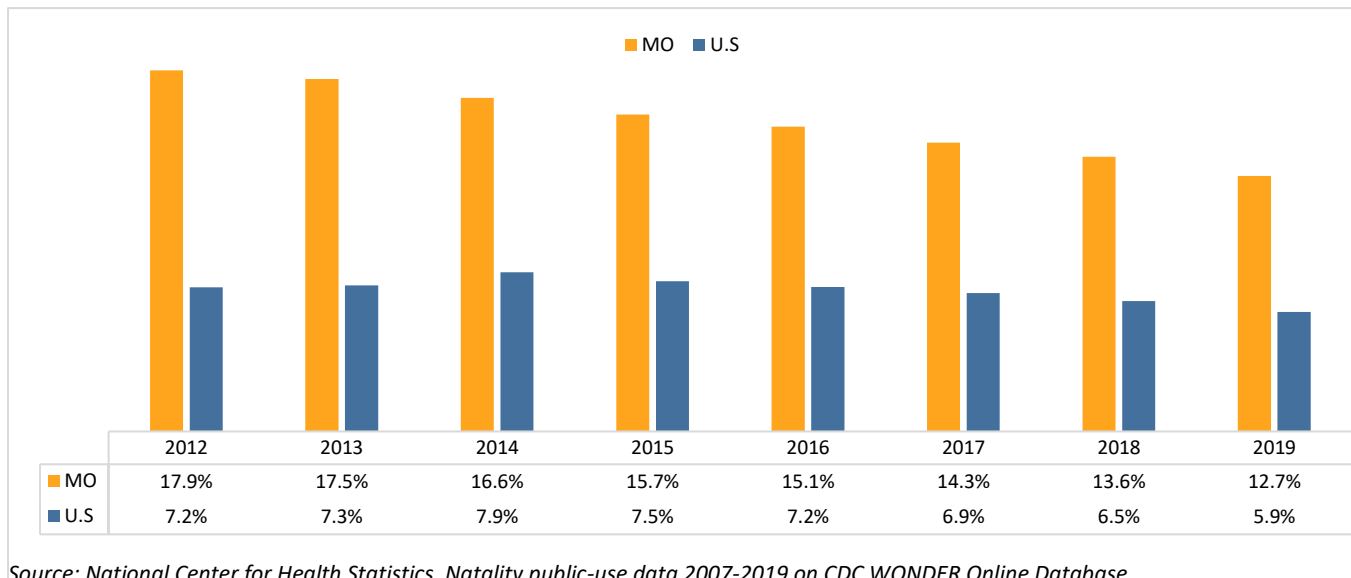
Source: Missouri Department of Revenue. Annual revenue reports. Total cigarette sales estimates are based on the cigarette tax portion of tobacco tax receipts. Breakouts for Jackson County and St. Louis County are based on supplemental county cigarette tax receipts.

### Tobacco Use during Pregnancy

The percentage of women reporting using tobacco during pregnancy has been declining in Missouri over the past decade. In 2019, 12.6% of pregnant women in Missouri reported smoking during pregnancy. Although declining, this is higher than the US average of 5.9%.

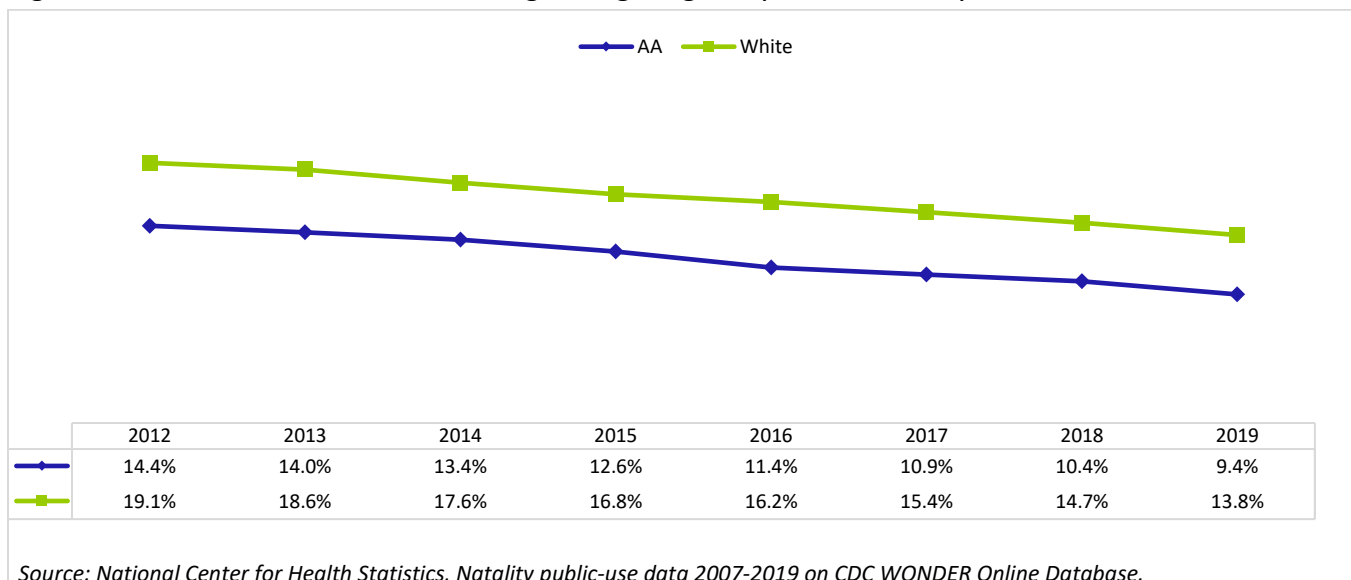
When looking at percentage by race in Missouri, white women are more likely to smoke during pregnancy than African American women.

Figure 23: % Births with Mother Using Tobacco during Pregnancy, U.S., and Missouri, 2012-2019.



Source: National Center for Health Statistics, Natality public-use data 2007-2019 on CDC WONDER Online Database.

Figure 24: % Births with Mother Smoking during Pregnancy in Missouri, By Race, 2012-2019.



Source: National Center for Health Statistics, Natality public-use data 2007-2019 on CDC WONDER Online Database.

## Tobacco Consequences

### Mortality Rates

Missouri has been higher than the national average for rate of deaths due to lung cancer, COPD and emphysema, and cardiovascular and ischemic cerebrovascular disease for the last decade.

When looking at rates by demographics, men and whites are more likely to die due to lung cancer.

Figure 25: Rate of Deaths from Lung Cancer per 100,000 Population: U.S. and MO, 1998-2019.

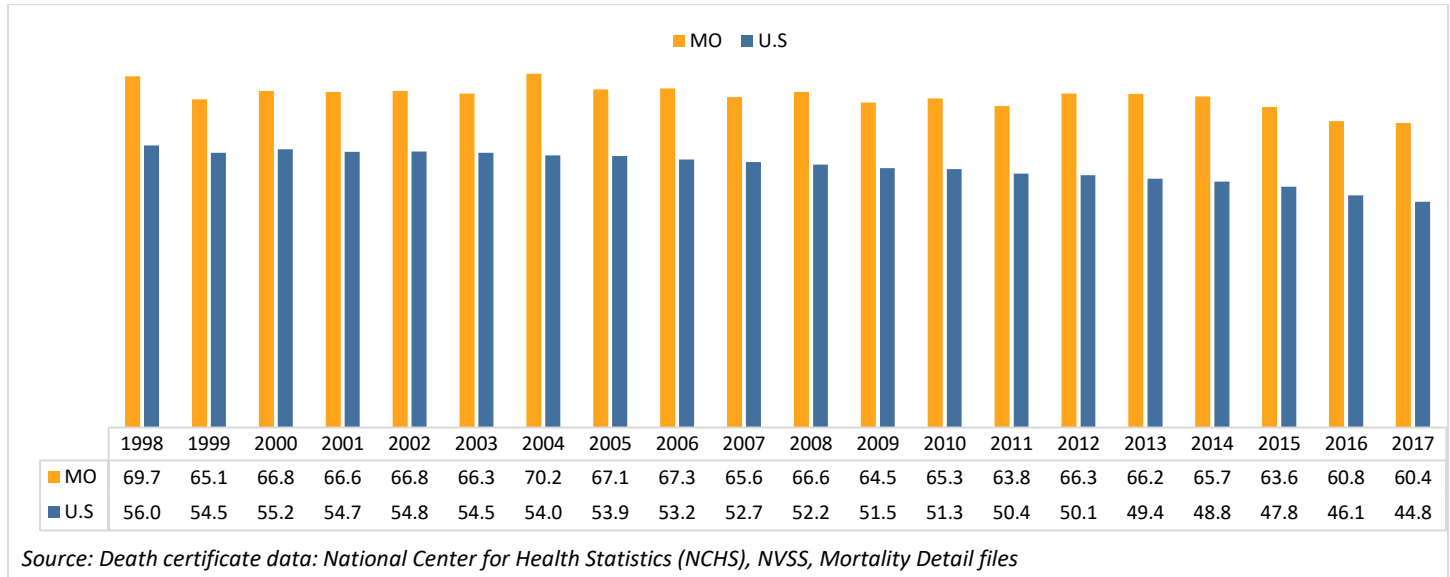
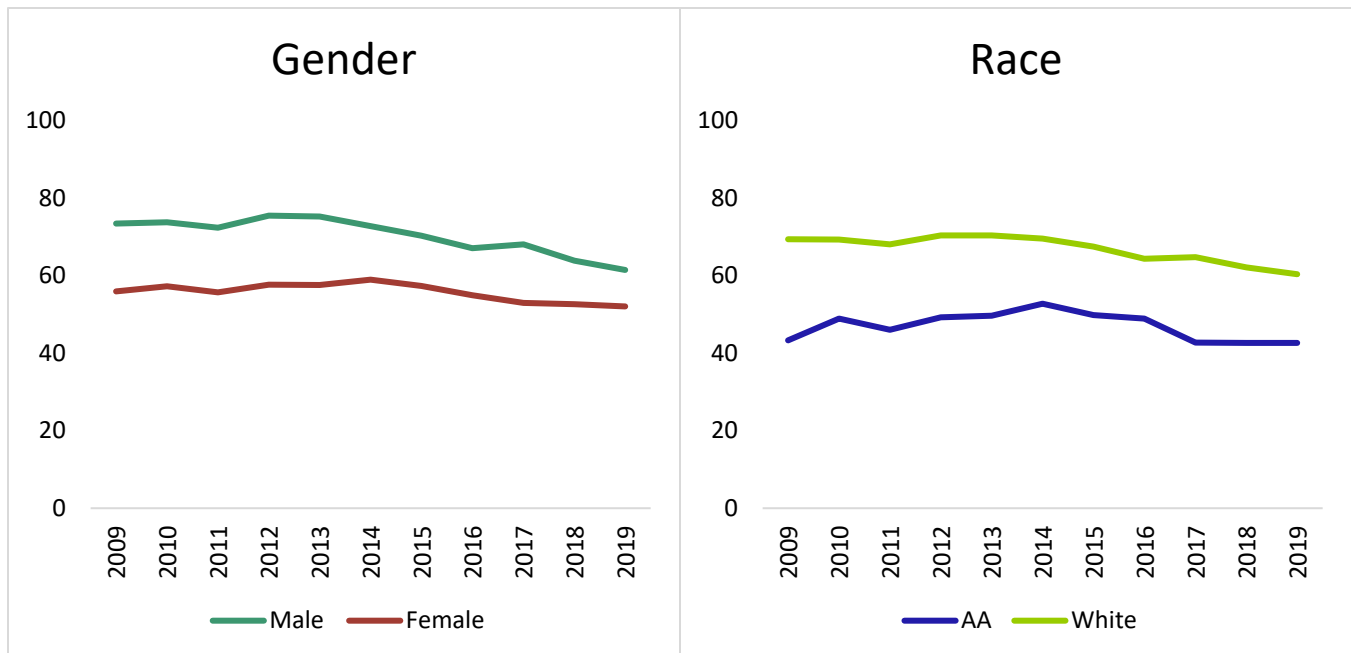


Figure 26: Rate of Deaths from Lung Cancer by Demographics per 100,000 Pop: MO only, 1998-2019.



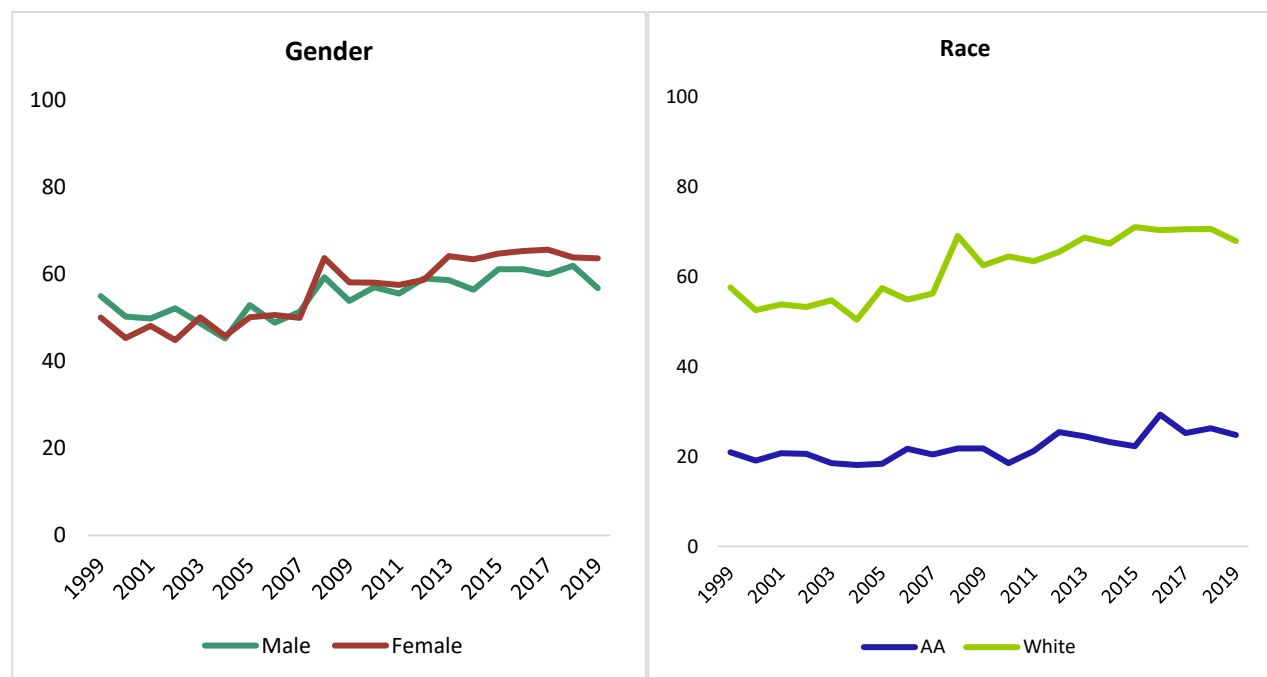
Source: National Center for Health Statistics. Underlying Cause of Death 1999-2019 on CDC WONDER Online Database

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Figure 27: Rate of Deaths from COPD and Emphysema per 100,000 Population: U.S. and MO, 1998-2019.



Figure 28: Rate of Deaths from COPD and Emphysema by Demographics per 100,000 Pop: MO only, 1998-2019.

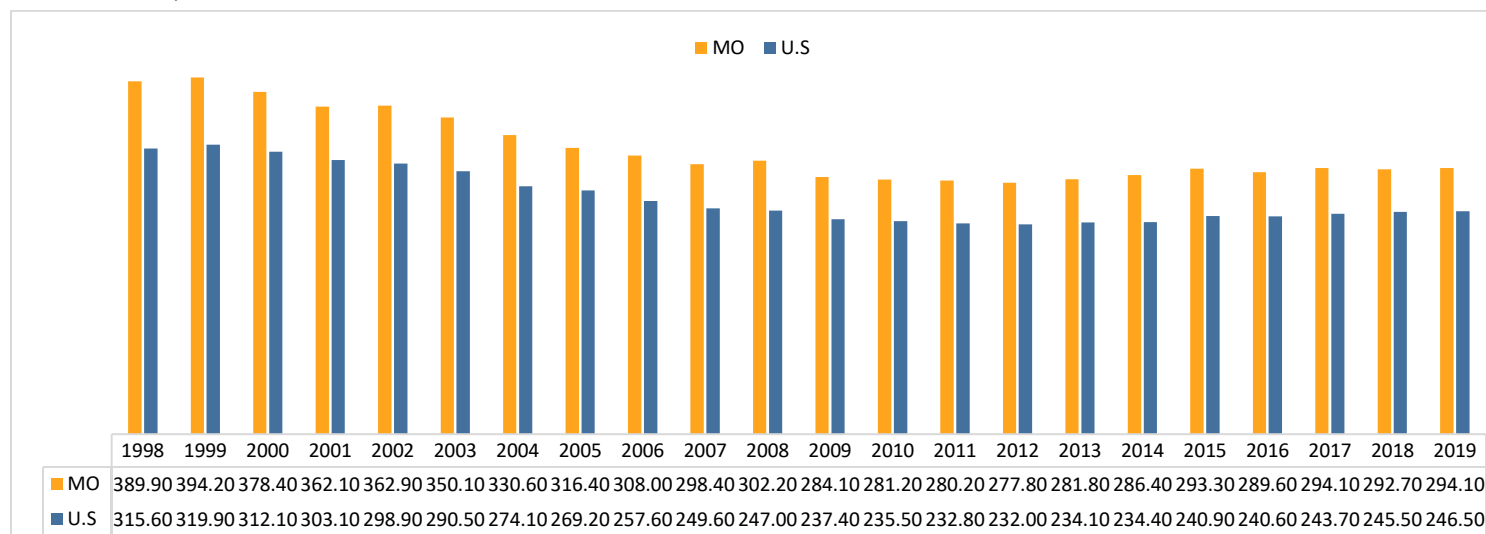


Source: National Center for Health Statistics. Underlying Cause of Death 1999-2019 on CDC WONDER Online Database



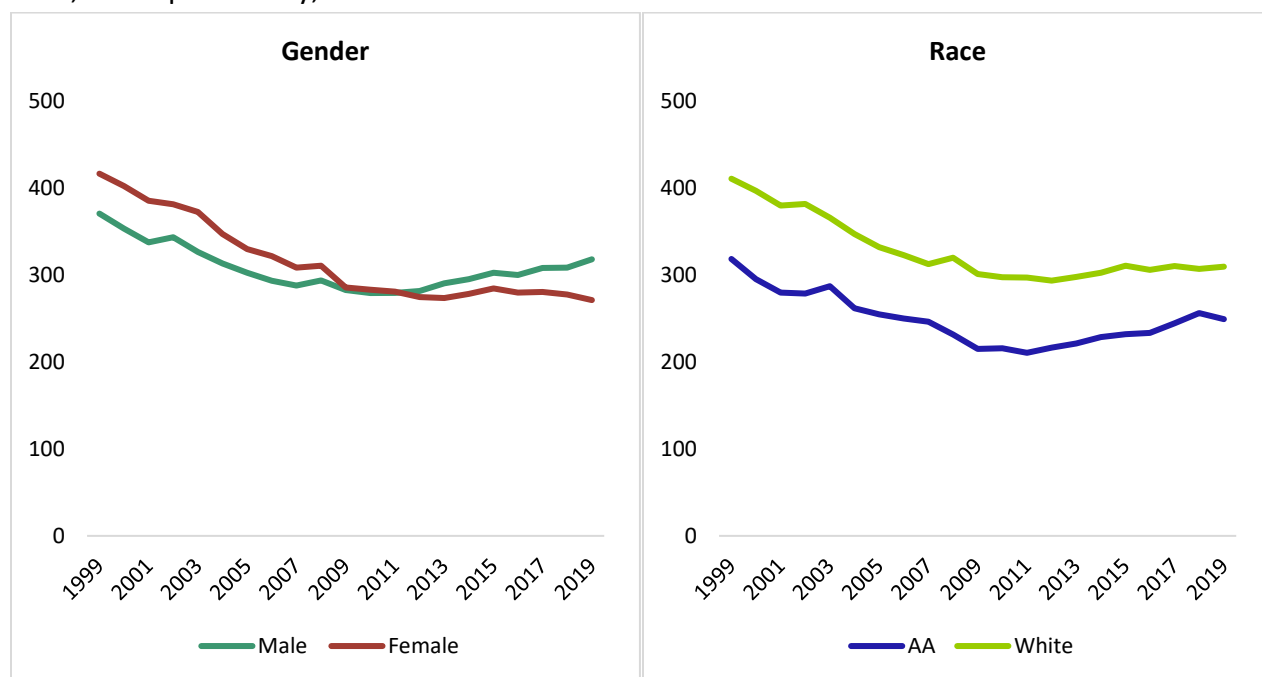
# STATE EPIDEMIOLOGY PROFILE- 2020

Figure 29: Rate of Deaths from Cardiovascular and Ischemic Cerebrovascular Disease per 100,000 Pop: U.S. and MO, 1998-2019.



Source: Death certificate data: National Center for Health Statistics (NCHS), NVSS, Mortality Detail files

Figure 30: Rate of Deaths from Cardiovascular and Ischemic Cerebrovascular Disease by Demographics per 100,000 Pop: MO only, 1998-2019.



Source: National Center for Health Statistics. Underlying Cause of Death 1999-2019 on CDC WONDER Online Database



## PRESCRIPTION DRUGS

## Prescription Drugs

### Nonmedical Use of Pain Relievers in the Past Year

In 2015, NSDUH updated the survey question to reflect use of a pain reliever “in a way that the doctor did not direct you to use them” rather than “nonmedical use”. Because of this, data prior to 2015 are not comparable. To review data prior to 2015, refer to the [2017 Missouri Epidemiological Profile](#).

In 2018-19, 3.4% of all Missourians aged 12 and older reported using pain relievers in a way a doctor did not prescribe them. This number is close to the national average of 3.6%.

Those aged 18-25 years are most likely than other age-groups to have reported non-medical use of pain relievers in the past month.

Figure 31: Estimated Past Year Non-Medical Use of Pain Relievers (%): U.S. and Missouri Ages 12 and Older, 2015-2019.

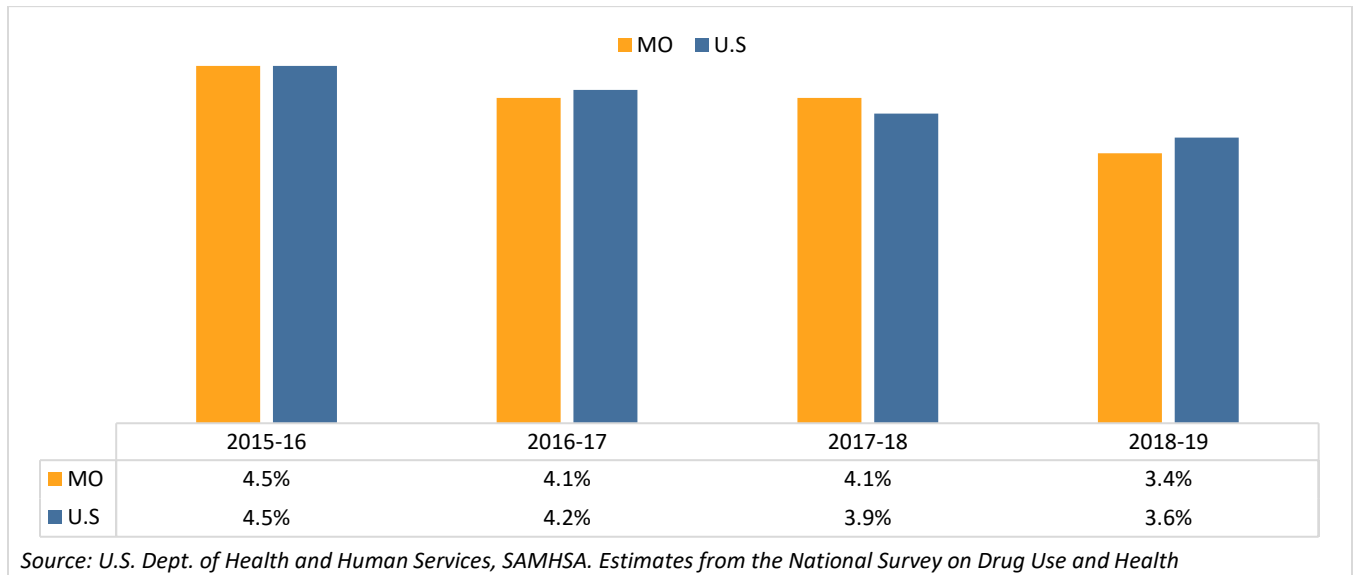
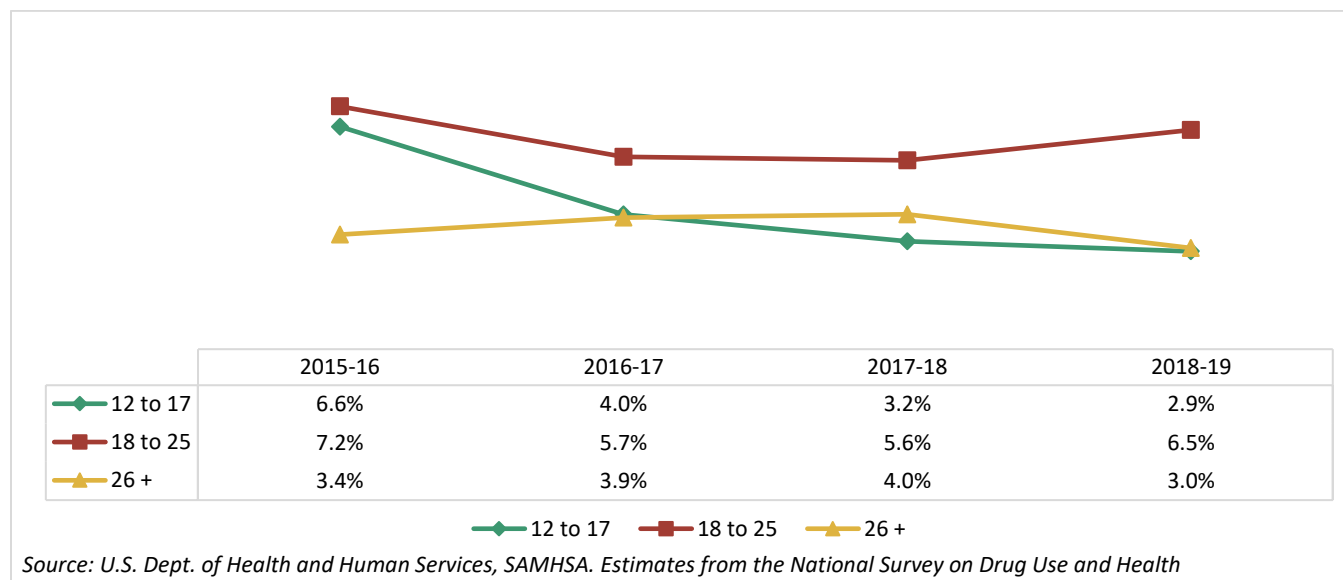


Figure 32: Estimated Past Year Non-Medical Use of Pain Relievers (%) in Missouri, By Age Group, 2015-2019.



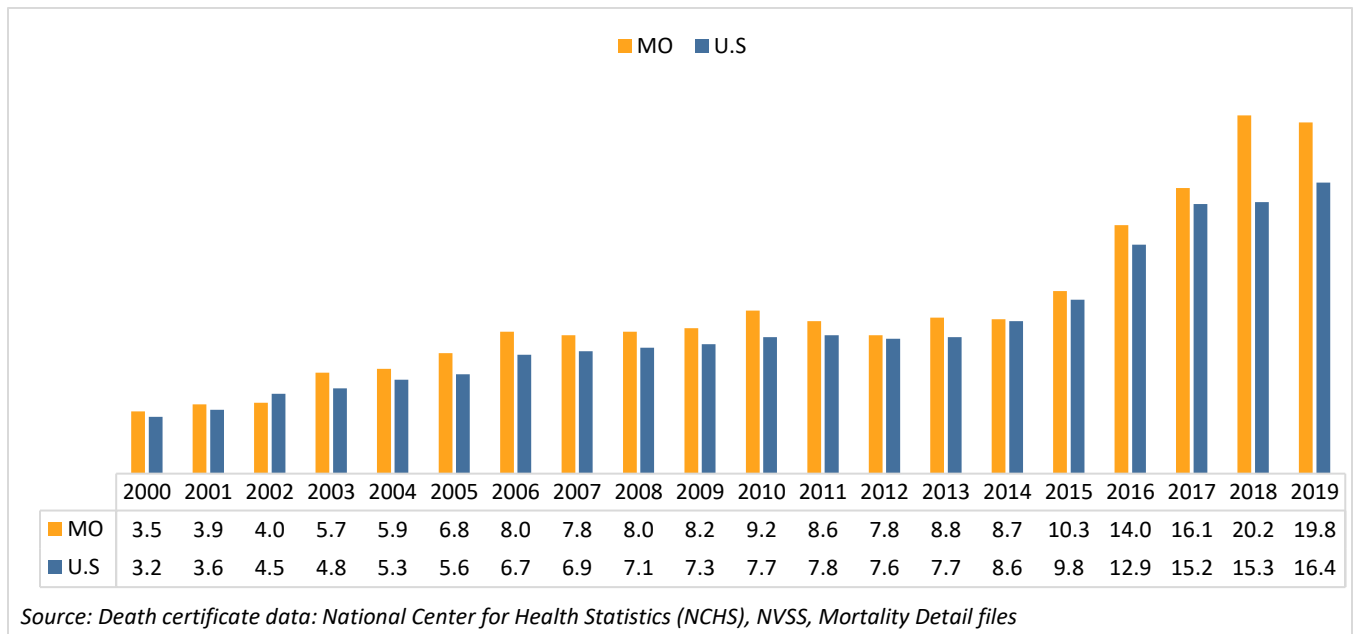
### Prescription Drug-Related Mortality

International Classification of Disease, tenth edition (ICD-10) classifies disease, injury, and cause of death into different groups. Each group has a code assigned to it. These codes do not record detailed information from the death certificates ([Soon Jye, Kho](#)).

The codes used to study the trends in prescription drugs mortality include multiple prescription drugs, including fentanyl. So, death cannot be attributed to one drug in the body of the deceased.

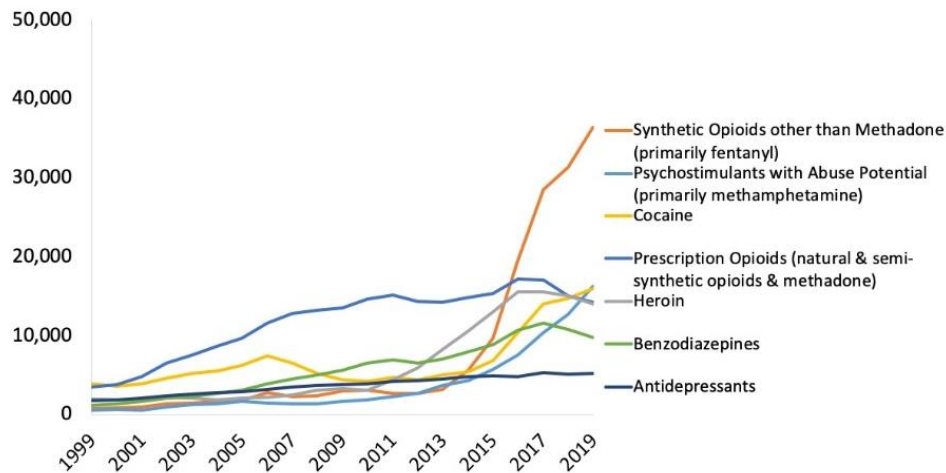
Missouri is consistently higher than the national average for rate of deaths due to prescription drugs. The spike in mortality in 2016 might primarily be due to fentanyl ([image 1](#)).

Figure 33: Rate of Deaths from Prescription Drug per 100,000 Pop: U.S. and Missouri, 2000-2019.



## STATE EPIDEMIOLOGY PROFILE- 2020

Image 1: National Drug-Involved Overdose Deaths among all ages, 1999-2019.

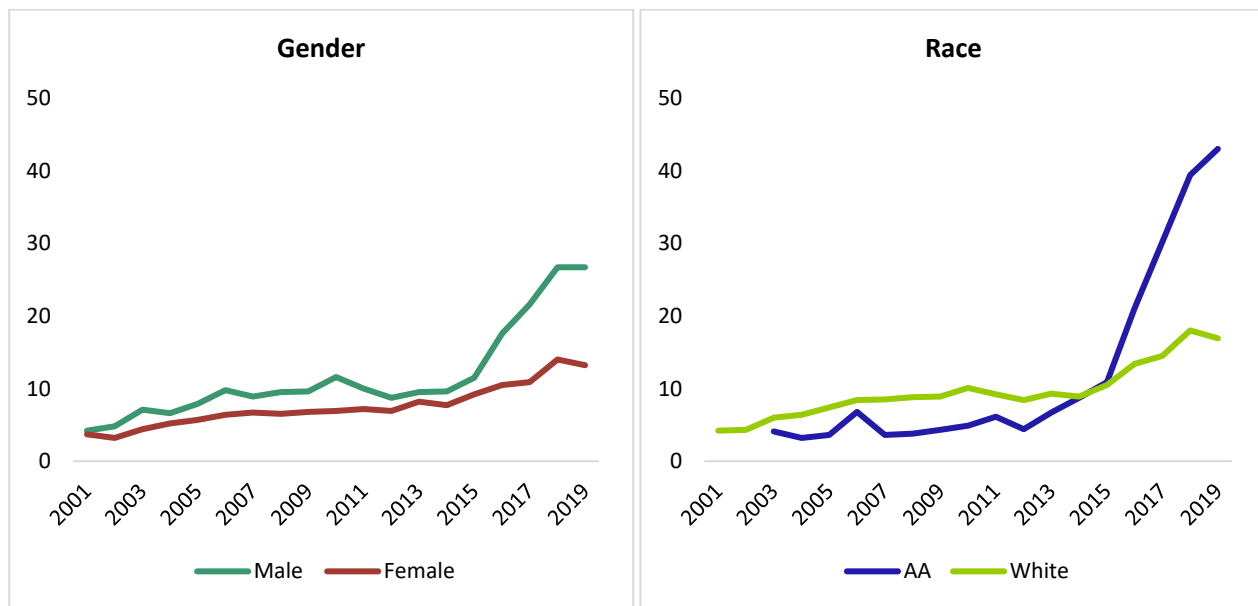


\*Includes deaths with underlying causes of unintentional drug poisoning (X40-X44), suicide drug poisoning (X60-X64), homicide drug poisoning (X85), or drug poisoning of undetermined intent (Y10-Y14), as coded in the International Classification of Diseases, 10th Revision. Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2019 on CDC WONDER Online Database, released 12/2020.

Source: [National Institute on Drug Abuse](#)

When looking at rates by demographics, men are more likely than women to die due to prescription drugs. There is a slight difference in prescription drug deaths by race. Whites were more likely to die due to prescription drugs until 2015; in recent year deaths among African Americans have increased.

Figure 34: Rate of Deaths from Prescription Drug by Demographics per 100,000 Pop: MO only, 2000-2019.

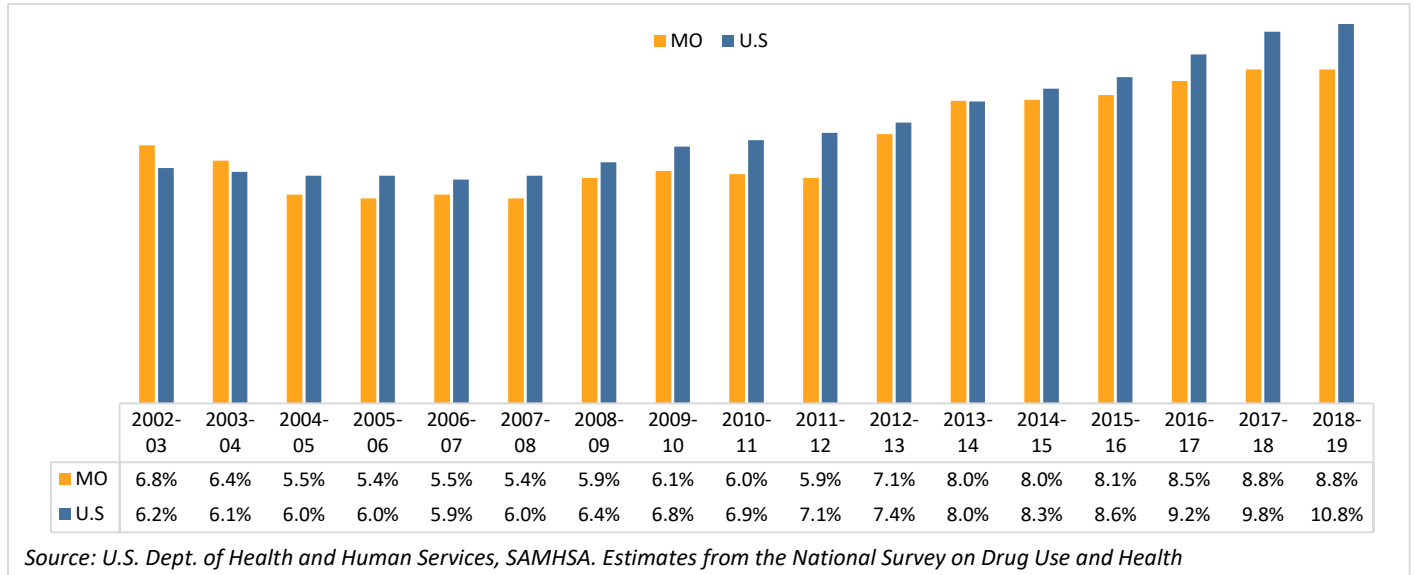


Source: National Center for Health Statistics. Underlying Cause of Death 2000-2016 on CDC WONDER Online Database

**Illicit Drugs****Marijuana**

In 2018-19, 8.8% of all Missourians aged 12 and older reported using marijuana in the past month, which has increased over the past few years and is just below the national average of 10.8%. Past-month marijuana use has been lower in Missouri than national average.

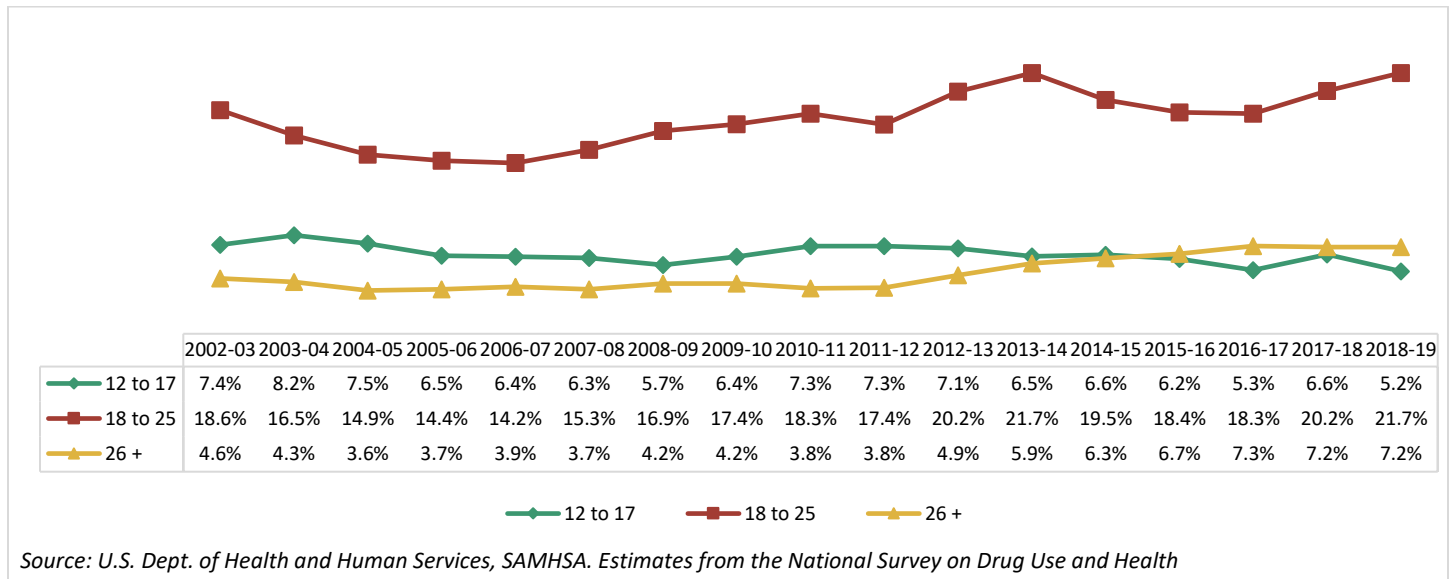
Figure 35: Estimated Past-Month Marijuana Use (%): U.S. and Missouri Ages 12 and Older, 2002-2019.



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Around five percent (5.2%) of Missourians in the 12-17 age group reported smoking marijuana in the last month. This compares to 21.7% of 18–25-year-old and 7.2% in the 26+ age group. Overall, individuals aged 18-25 year are most likely to have used marijuana in the past month compared to other age-groups. Current information for illicit drug use among Missouri students can be found in the [Missouri Student Survey report](#).

Figure 36: Estimated Past-Month Marijuana Use (%): In Missouri by Age Group, 2002-2019.





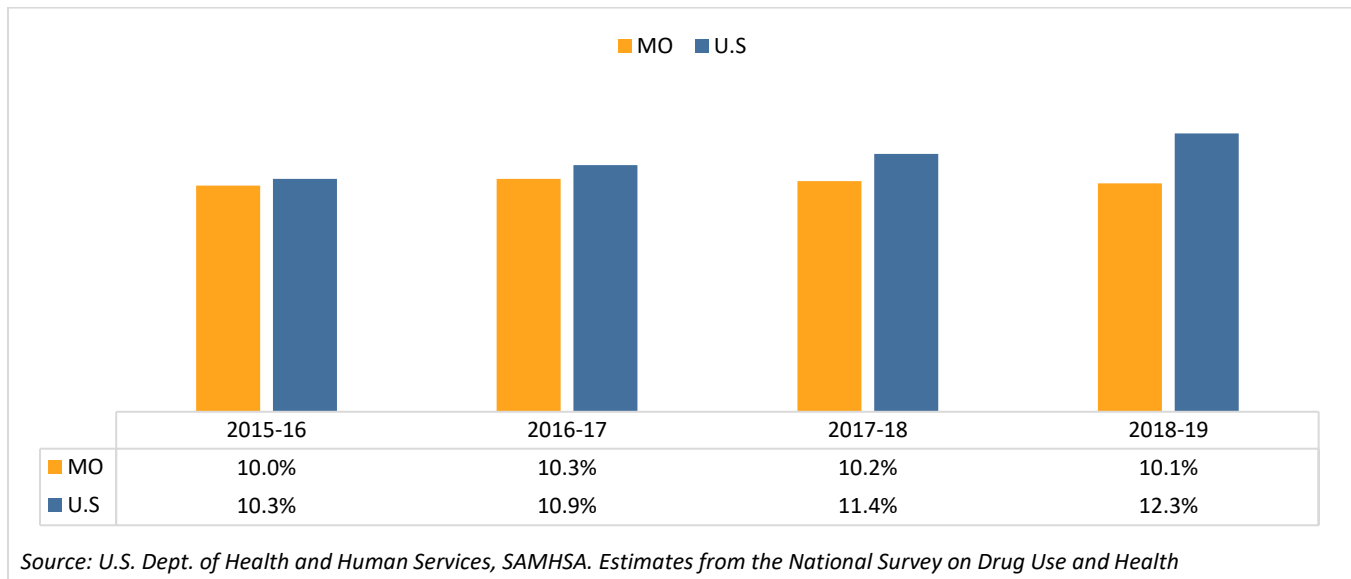
## Other Illicit Drugs

“Other illicit drugs” is defined as an illegal drug other than marijuana, or an abusable product that can be obtained legally, such as prescription drugs. In 2015, NSDUH made changes to survey questions on hallucinogens, inhalants, methamphetamine, and psychotherapeutic drugs. Therefore, data prior to 2015 are no longer comparable to current data. To review data prior to 2015, refer to the [2017 Missouri Epidemiological Profile](#).

In 2018-19, 10.1% of all Missourians 12 and older reported using illicit drugs in the previous month. This is less than the national average of 12.3%. Trends show that the past-month Illicit drug use is relatively constant in Missouri and has increased nationally.

Data on students in 9-12 grades reporting illicit drug use have not been updated since 2009 and so were discontinued for this report. More current information for Missouri students and illicit drug use can be found in the [Missouri Student Survey report](#).

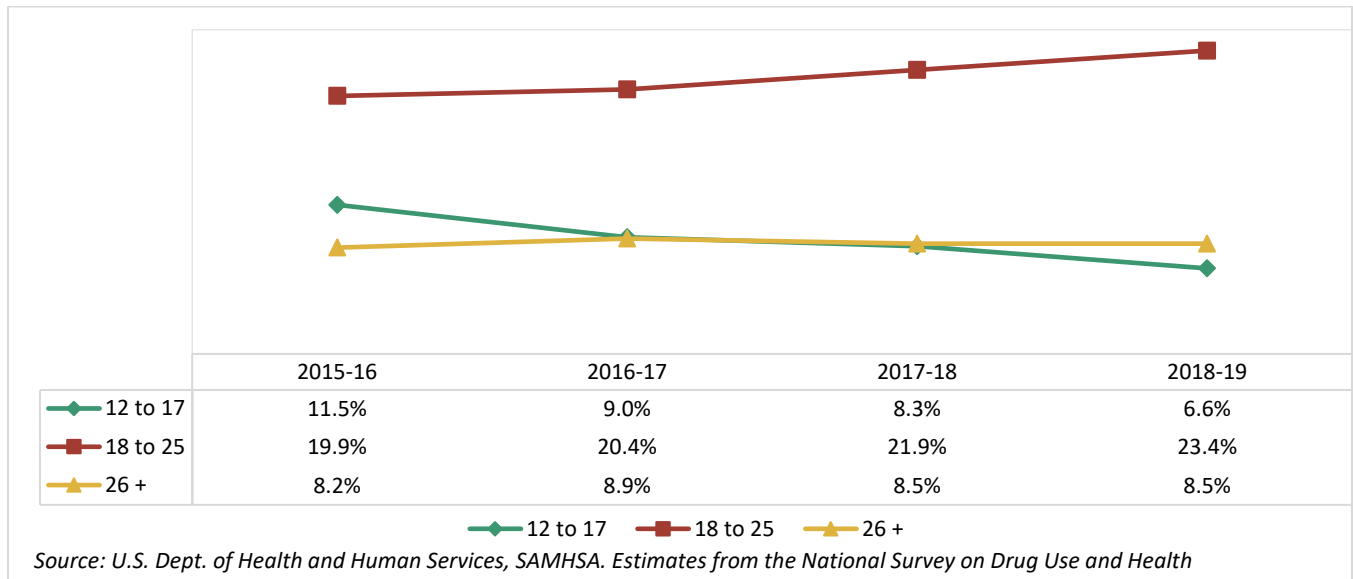
Figure 37: Estimated Past-Month Other Illicit Drug Use (%): U.S. and Missouri Ages 12 and Older, 2015-2019.



6.6% of Missourians in the 12-17 age group reported using illicit drugs in the past month, compared to 23.4% of 18–25-year-old and 8.5% in the 26+ age group. Over the past few years, those in the 18–25-year-old age group are most likely to have reported using illicit drugs in the past month.

In 2018-19, the trends for each of the age-groups were different. The past-month Illicit drug use declined for 12-17, increased for 18-25, and remained constant for 26+ age group in 2018-2019 when compared to previous year.

Figure 38: Estimated Past-Month Other Illicit Drug Use (%): In Missouri by Age Group, 2015-2019.



## Illicit Drug Consequences

### Illicit Drug-Related Mortality

Missouri has been lower than the national average for rate of deaths due to drug related behaviors for the last decade, until 2018. In 2019, the rate of deaths due to drug related behaviors in Missouri increased and is similar to the national average. Men are more likely than women to die due to drug related behavior. Since 2015, the mortality rates due to drug related behavior is more among African Americans than White population

Figure 39: Rate of Deaths from Drug Related Behavior per 100,000 Pop: U.S. and Missouri, 1998-2019.

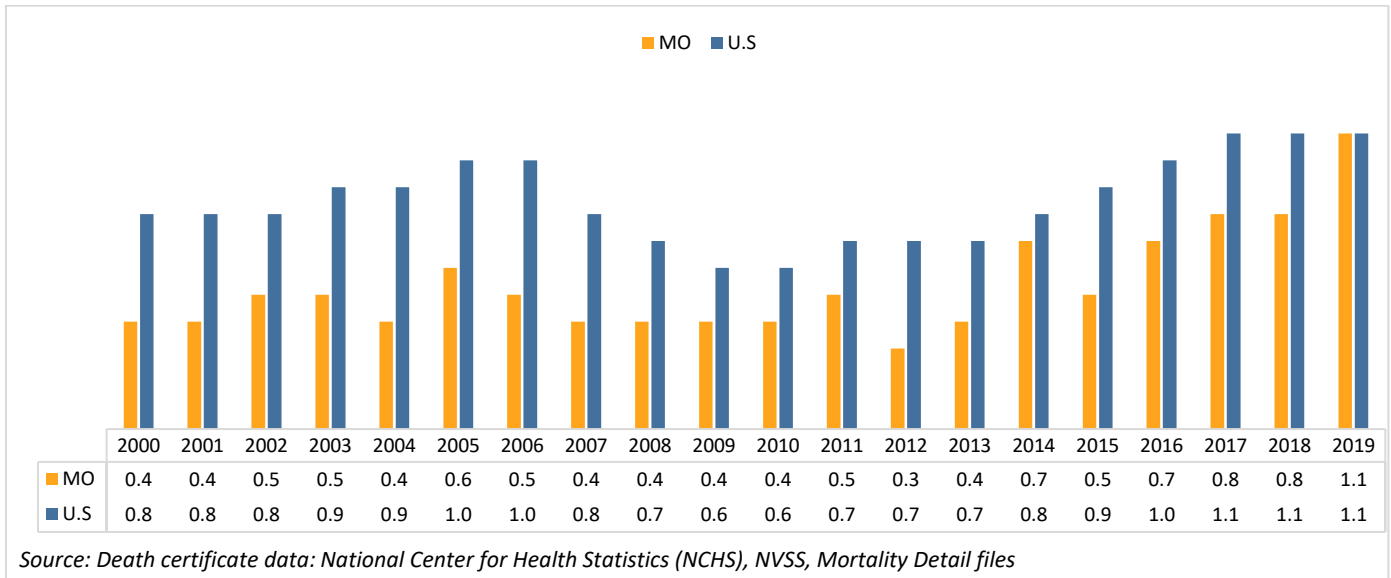
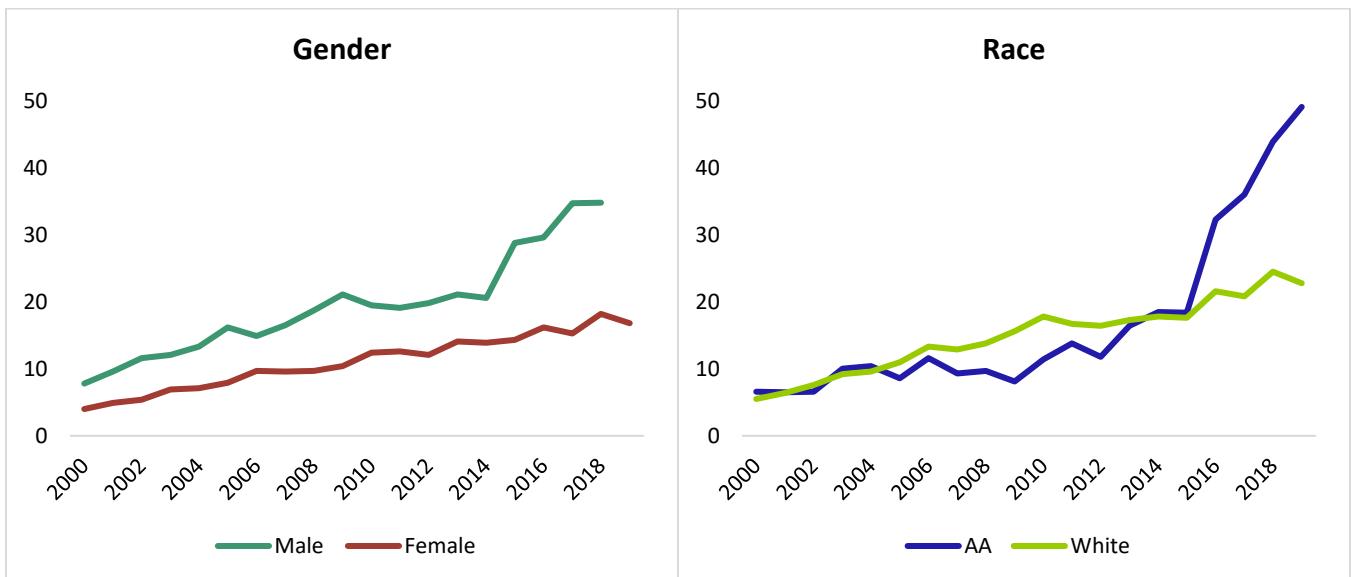


Figure 40: Rate of Deaths from Drug Related Behavior per 100,000 Pop: MO only, 2000-2018.



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Missouri has been higher than the national average for rate of deaths related to drug related overdose/ poisonings since 2003. This number has been consistently increasing for both Missouri and the U.S.

Men are more likely than women to die from drug related overdose/poisonings. Since 2013, deaths among African Americans have increased and is more when compared to whites.

Figure 41: Rate of Deaths from Drug Related Overdose/Poisonings per 100,000 population: U.S. and Missouri, 2000-2019.

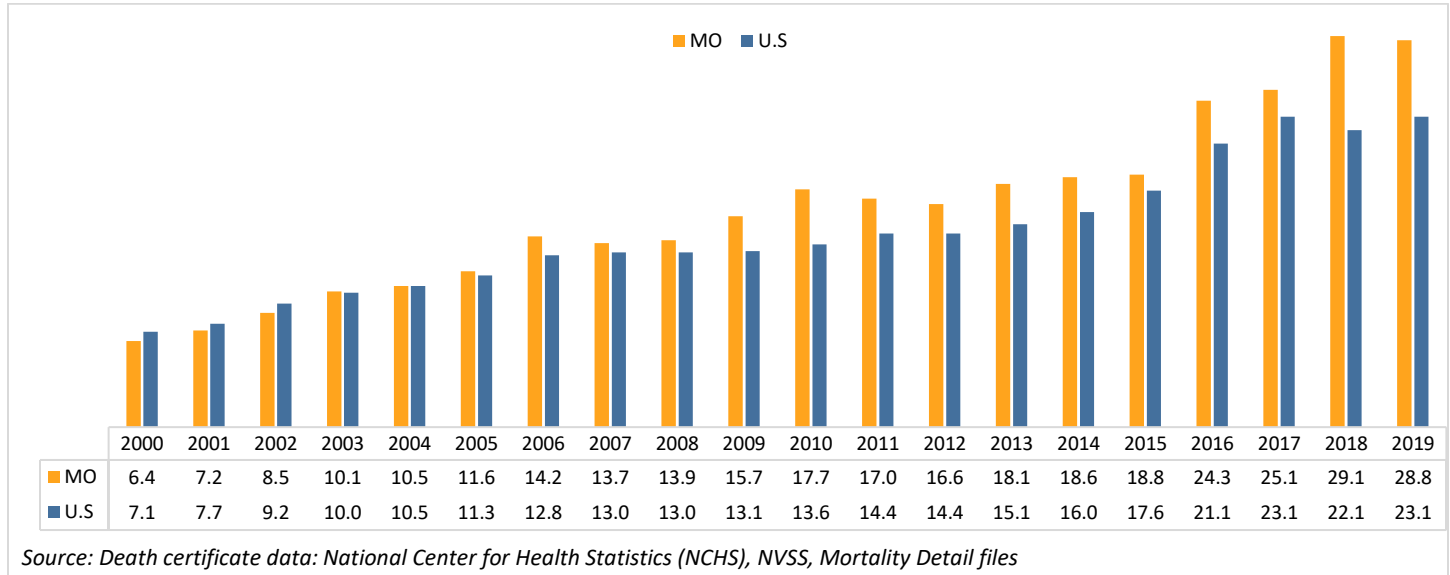
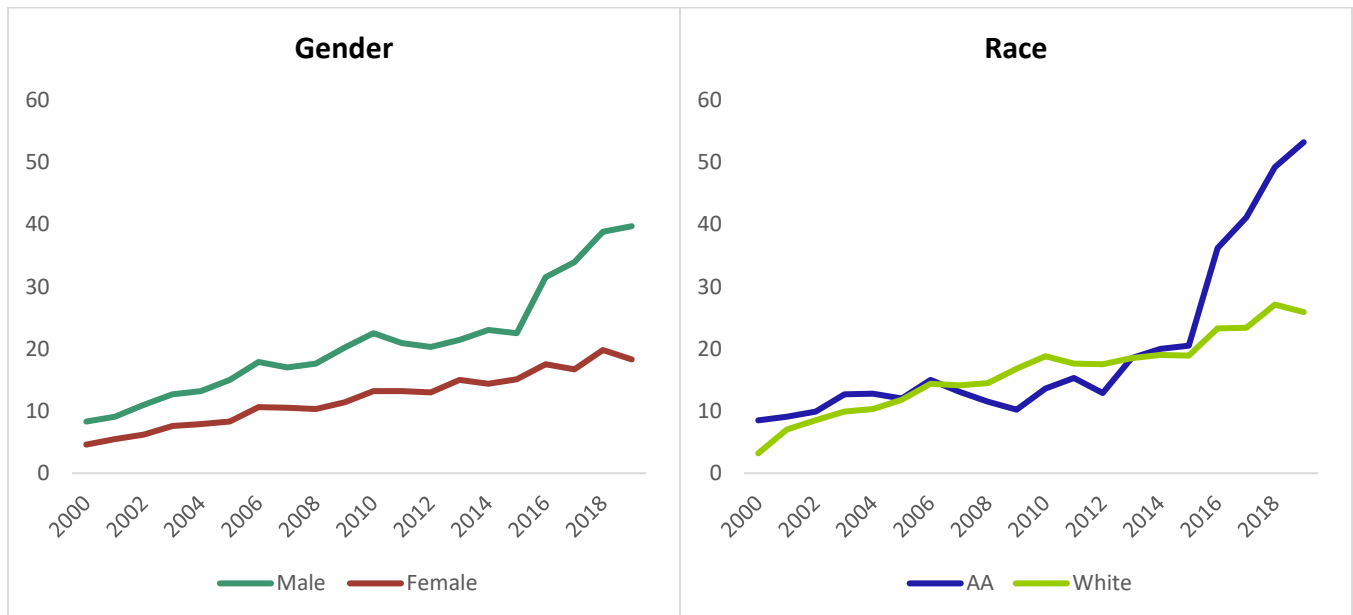


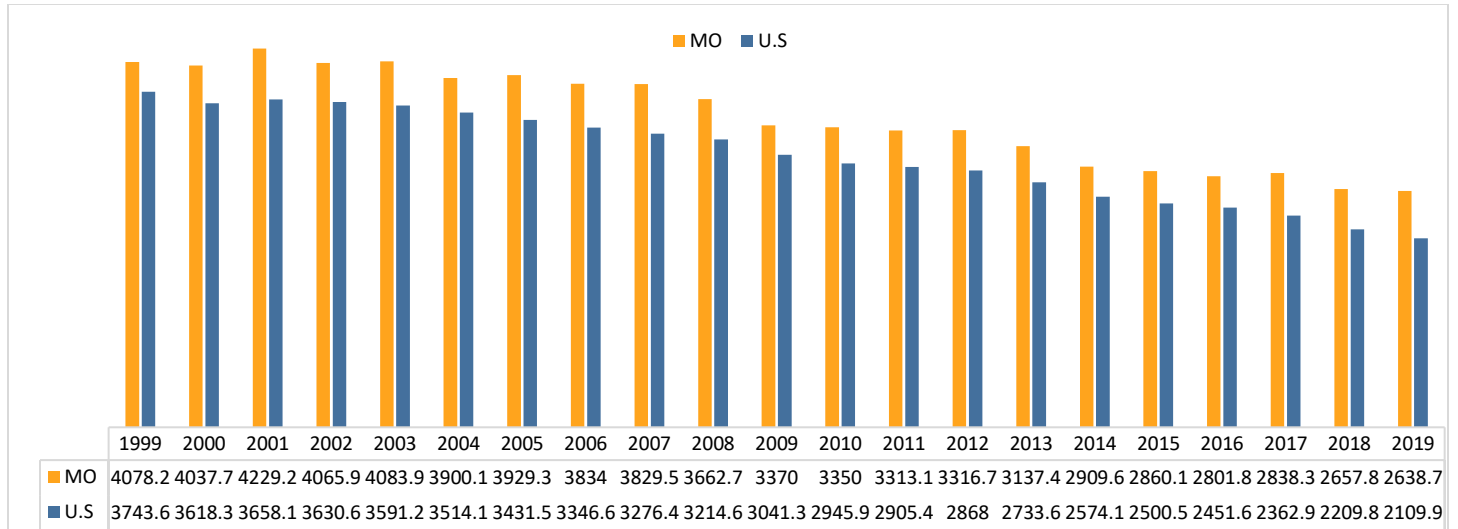
Figure 42: Rate of Deaths from Drug Related Overdose/Poisonings by Demographics per 100,000 Pop: MO only, 2000-2019.



## Crime

Missouri has been higher than the national average for number of property crimes for the last decade. Rates for both Missouri and the US are trending downward since 2001.

Figure 43: Number of Property crimes (larceny, burglary, motor vehicle theft, arson) Reports to Police per 100,000 Pop, U.S. and Missouri, 1999-2019.



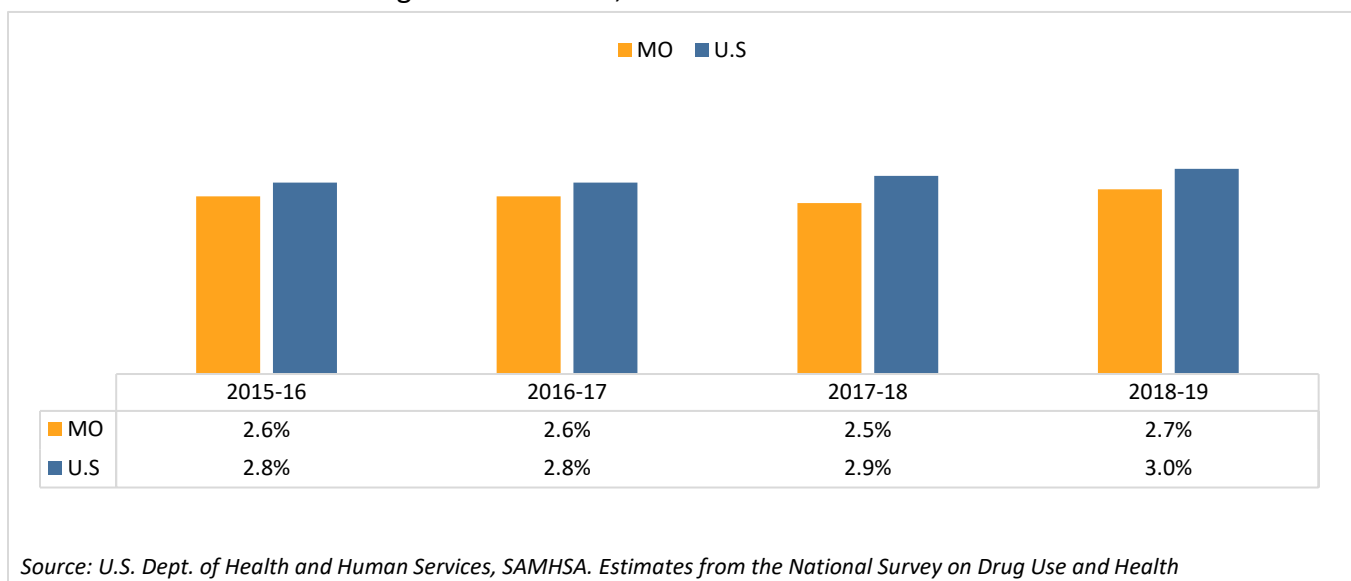
Source: U.S. Department of Justice, Federal Bureau of Investigation, Uniform Crime Reporting (UCR) Program

### Illicit Drug Use Disorder

Illicit Drug Use Disorder is defined as meeting criteria for illicit drug dependence or abuse. In 2015, NSDUH made changes to survey questions on hallucinogens, inhalants, methamphetamine, and psychotherapeutic drugs. Therefore, data prior to 2015 are no longer comparable to current data. To review data prior to 2015, refer to the [2017 Missouri Epidemiological Profile](#).

2.7% of Missourians aged 12 and older met criteria for Illicit Drug Use or Dependence in 2018-19. Over the past few years, this number has remained relatively steady and less than the national average.

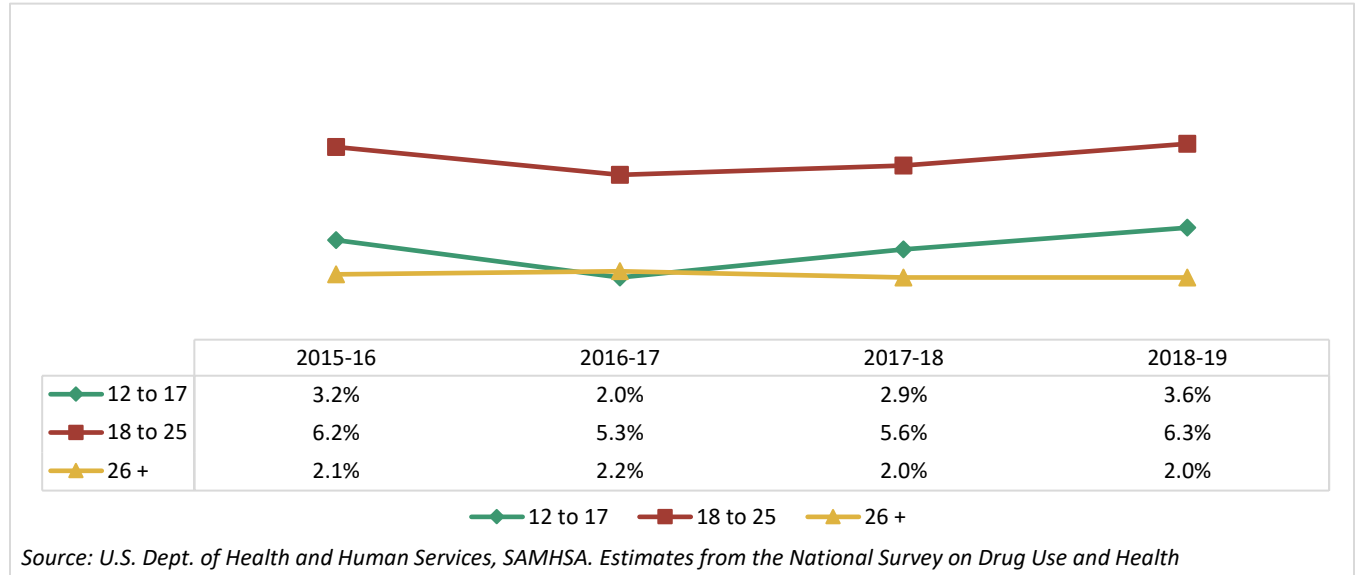
Figure 44: % of Persons Aged 12 or Older Reporting Dependence on or Abuse of Any Illicit Drug in the Past Year: U.S. and Missouri Ages 12 and Older, 2015-2019.



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In 2018-19, 3.6% of those in the 12-17 age group reported dependence or use of an illicit drug in the past year. This compares to 6.3% of 18–25-year-olds and 2.0% in the 26+ age group. Overall, those in the 18–25-year-old age group are most likely to be dependent on or misusing illicit drugs.

Figure 45: % of Persons Aged 12 or Older Reporting Dependence on or Abuse of Any Illicit Drug in the Past Year: In Missouri by Age Group, 2015-2019.



## **Key Risk and Protective Factors (i.e. Intervening Variables)**





### Youth Risk and Protective Factors

During the Strategic Prevention Framework State Incentive Grant (SPF SIG) and continuing into the Partnerships for Success Grant (PFS), Missouri coalitions were encouraged to use the Hawkins and Catalano Model of Risk and Protective Factors in their strategic planning process. The model provides a variety of risk factors and protective factors that may contribute to youth's drinking behaviors and has been adapted to apply to other problem behaviors (e.g., drugs, violence, etc.). Coalition members used the model to decide what intervening variables might be at the root of the priority issues in their communities. Then they gathered data on the selected intervening variables and used data-based decision making to determine which variables would be addressed under the grant. To continue building upon what communities learned in these efforts, Missouri will continue to define Risk and Protective Factors according to the Hawkins and Catalano Model.

The only data source currently available in Missouri for these risk and protective factors is the Missouri Student Survey (MSS)<sup>3</sup>. This section borrows heavily from the 2020 Missouri Student Survey Report<sup>3</sup>. Data are collected in the Spring of even number years.

### **Peer Engagement in the Problem Behavior**

Most youth surveyed had no friends who used substances. Among those who reported having friends using substances indicated that their friends commonly used Alcohol and Marijuana

Table 2: % of Youth who have Friends that Use Substances, 2020.

	0 friends	1 friend	2 friends	3 friends	4 + friends
<b>Cigarettes</b>	75.8%	11.1%	4.8%	2.1%	6.2%
<b>Alcohol</b>	55.4%	10.0%	9.0%	4.9%	20.6%
<b>Marijuana</b>	60.3%	11.5%	6.4%	4.8%	17.0%
<b>Other Illegal Drugs</b>	88.5%	6.1%	2.7%	0.9%	1.7%

Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2020) Missouri Student Survey Report.

<sup>3</sup> Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2020) Missouri Student Survey Report

## Perception of Harm

Most youth believed that alcohol and drug use pose a moderate or great risk to them. Overall, cigarettes, over the counter drugs, synthetic drugs, and other illegal drugs are reported to be of great risk.

Table 3: Youths' Perception of Risk of Harm from Using Substances, 2020.

	No Risk at All	Slight Risk	Moderate Risk	Great Risk
<b>Cigarettes (1+ packs per day)</b>	7.2%	11.7%	20.3%	60.8%
<b>Alcohol:</b>				
Any alcohol use	10.6%	35.9%	29.2%	24.3%
One or two drinks nearly every day	11.2%	23.9%	32.5%	32.4%
Five or more drinks once or twice a week	8.4%	15.7%	29.5%	46.4%
<b>E-Cigarettes</b>	10.7%	22.5%	28.1%	38.7%
<b>Marijuana (1-2 times per week)</b>	18.5%	20.7%	19.8%	41.0%
<b>Over the Counter Drugs</b>	8.7%	14.7%	27.7%	48.9%
<b>Prescription Drugs</b>	5.9%	8.3%	20.1%	65.7%
<b>Other Illegal Drugs</b>	5.3%	4.3%	12.5%	78.0%
<b>Synthetic Drugs</b>	6.9%	6.3%	16.9%	69.9%

Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2020) Missouri Student Survey Report.

## Law Enforcement

Most youth did not believe that the police would catch a substance user in their neighborhood. This is fairly consistent across all drugs.

Table 4: % of Youth who Think The Police would Catch Substance Users in their Neighborhood, 2020.

	No!*	No*	Yes*	Yes!*
<b>Cigarettes</b>	29.1%	43.9%	18.7%	8.2%
<b>Alcohol</b>	31.9%	40.1%	19.4%	8.7%
<b>Marijuana</b>	26.2%	34.8%	24.1%	14.9%

Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2020) Missouri Student Survey Report.

\* No!= Don't agree, No= Sort of agree, Yes!= Really agree, Yes= Sort of agree

## Availability

Approximately half of all youth surveyed thought that over the counter drugs, E-Cigarettes, and alcohol were either “very easy” or “sort of easy” to obtain. Among all the drugs, marijuana, prescription drugs, synthetic drugs, and other illegal drugs perceived to be “very hard” to obtain by the youth.

Table 5: Youths’ Perception of Substance Availability, 2020.

	Very Easy	Sort of Easy	Sort of Hard	Very Hard
<b>Cigarettes</b>	18.9%	20.6%	21.8%	38.7%
<b>Alcohol</b>	31.1%	21.3%	16.8%	30.9%
<b>Over-the-Counter Drugs</b>	31.4%	19.5%	14.3%	34.9%
<b>E-Cigarettes</b>	27.1%	21.5%	14.9%	36.4%
<b>Marijuana</b>	20.9%	17.1%	14.7%	47.3%
<b>Prescription Drugs</b>	9.7%	11.4%	21.2%	57.7%
<b>Synthetic Drugs</b>	9.1%	9.3%	17.6%	63.9%
<b>Other Illegal Drugs</b>	4.5%	5.9%	13.9%	75.7%

Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2020) Missouri Student Survey Report.

## Perception of ‘wrongness’

Most youth thought that it was “very wrong” to use any of the substances. Among all the other substances, the youth perceived alcohol and marijuana to be “not wrong at all”.

Table 6: Youths’ Perception of Wrongfulness of Substance Use, 2020.

	Not wrong at all	A little bit wrong	Wrong	Very wrong
<b>Cigarettes</b>	4.5%	7.9%	15.5%	72.2%
<b>Alcohol:</b>				
Any type of alcohol	12.9%	20.0%	19.0%	48.0%
One or two drinks every day	5.4%	9.7%	20.5%	64.4%
Five or more drinks once or twice a week	5.1%	7.3%	18.5%	69.2%
<b>E-Cigarettes</b>	8.6%	14.3%	18.7%	58.4%
<b>Marijuana:</b>				
Any use	12.0%	12.5%	14.5%	61.0%
Once or twice a week	9.8%	10.8%	15.1%	64.3%
<b>Over the Counter Drugs</b>	3.1%	4.0%	13.2%	79.7%
<b>Prescription Drugs</b>	1.9%	3.3%	10.2%	84.6%
<b>Other Illegal Drugs</b>	1.7%	2.5%	7.6%	88.2%

Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2020) Missouri Student Survey Report.

### Rebellious attitudes

Most youth did not report rebellious attitudes.

Table 7: Extent of Rebellious Attitudes, 2020.

	Strongly disagree	Disagree	Agree	Strongly Agree
<b>I ignore rules that get in my way.</b>	41.2%	42.2%	14.0%	2.6%
<b>I do the opposite of what people tell me, just to get them mad.</b>	51.1%	34.6%	11.5%	2.9%
<b>I think sometimes it is okay to cheat at school.</b>	43.6%	31.5%	19.5%	5.4%

Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2020) Missouri Student Survey Report.

### Parental attitudes

Most youth thought that their parents would think they were “very wrong” to use any of the substances asked about.

However, again youth saw alcohol as the least “wrong” drug when considering their parents’ perception of wrongfulness. When a dosage was indicated (1-2 drinks nearly every day), youth reported similar “wrongfulness” for alcohol as compared to other drugs.

Table 8: Youths’ Perception of Parental Perception of Wrongfulness of Substance Use, 2020.

	Not wrong at all	A little bit wrong	Wrong	Very wrong
<b>Tobacco</b>	3.0%	5.2%	13.9%	77.9%
<b>Alcohol (dosage not indicated)</b>	6.2%	12.8%	20.7%	60.4%
<b>Alcohol (1-2 drinks nearly every day)</b>	2.5%	4.0%	12.5%	80.9%
<b>Marijuana (dosage not indicated)</b>	4.1%	5.0%	11.2%	79.7%
<b>Marijuana (1-2 times per week)</b>	3.6%	3.9%	8.9%	83.6%
<b>Over the Counter Drugs</b>	2.6%	1.1%	7.2%	89.2%
<b>Prescription Drugs</b>	2.2%	1.5%	7.6%	88.6%

Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2020) Missouri Student Survey Report.

### School bonding

The majority of youth had positive things to say about their school environment. Youth were least likely to endorse the item asking if the school notifies their parents when they have done something well.

Table 9: Perceptions and Attitudes toward School by Youth, 2020.

	Strongly disagree	Disagree	Agree	Strongly Agree
<b>My teacher(s) notice(s) when I am doing a good job and let me know about it.</b>	5.5%	20.0%	57.4%	17.0%
<b>The school lets my parents know when I have done something well.</b>	22.3%	39.2%	30.2%	8.2%
<b>In my school, rules are enforced fairly.</b>	11.3%	26.6%	49.1%	12.9%
<b>In my school, students of all races and ethnic groups are treated equally.</b>	7.4%	13.0%	42.9%	36.7%

Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2020) Missouri Student Survey Report.

### Conclusion for youth attitudes and perception of drug use

The majority of 6-12 graders in Missouri do not have friends who use substances. Friends who used substances, mostly reported using alcohol and Marijuana. Where the youth believed that alcohol and drug use pose a moderate or great risk to them, they also reported cigarettes, over the counter drugs, synthetic drugs, and other illegal drugs are reported to be of great risk. A consistent finding across cigarettes, alcohol and marijuana was observed in youth's perception of law enforcement. Over 50% believe that the police would not catch a substance user in their neighborhood. When asked about the ease of availability, approximately half of the participants thought that over-the-counter drugs, E-Cigarettes, and alcohol were either "very easy" or "sort of easy" to obtain. Most youth thought that it was "very wrong" to use any of the substances. The youth also reported alcohol to be the least "wrong" drug when considering parent's perception of wrongness.

## Adult Attitudes and Perceptions of Drug Use

A community level survey was implemented in 2018 to capture data similar to the Missouri Student Survey with a more randomized sample of adults. Questions were generated by Missouri's Prevention Resource Centers. The survey was completed using the online survey tool, Qualtrics, and advertised to the public through geographically targeted Facebook ads. A total of 3349 adults completed the survey. Parents made up 79.4% of sample size. To view the results of this survey, please refer to [State Epidemiology Profile, 2019](#).

The results of this survey were compared with the results of 2020 MSS to understand difference in youth and adult's attitudes. As compared to adults, a higher percentage of youth considered having moderate or great risk using 1 or 2 alcoholic drinks nearly every day as well as consuming marijuana 1-2 times per week. On the other side, youth is less likely than adults to perceive moderate or great risk from using e-cigarettes and prescription drugs not prescribed by the doctor. Further, a higher percentage of adults considered marijuana was very easy or sort of easy to obtain than the youth.

Although this comparison is interesting, it should be noted that the survey year, questions, and sample size is different for both the surveys. So, the results are not directly comparable, but it gives an idea of difference in beliefs of youth and adults for substance use and availability. This finding can also be used to plan future data collection.

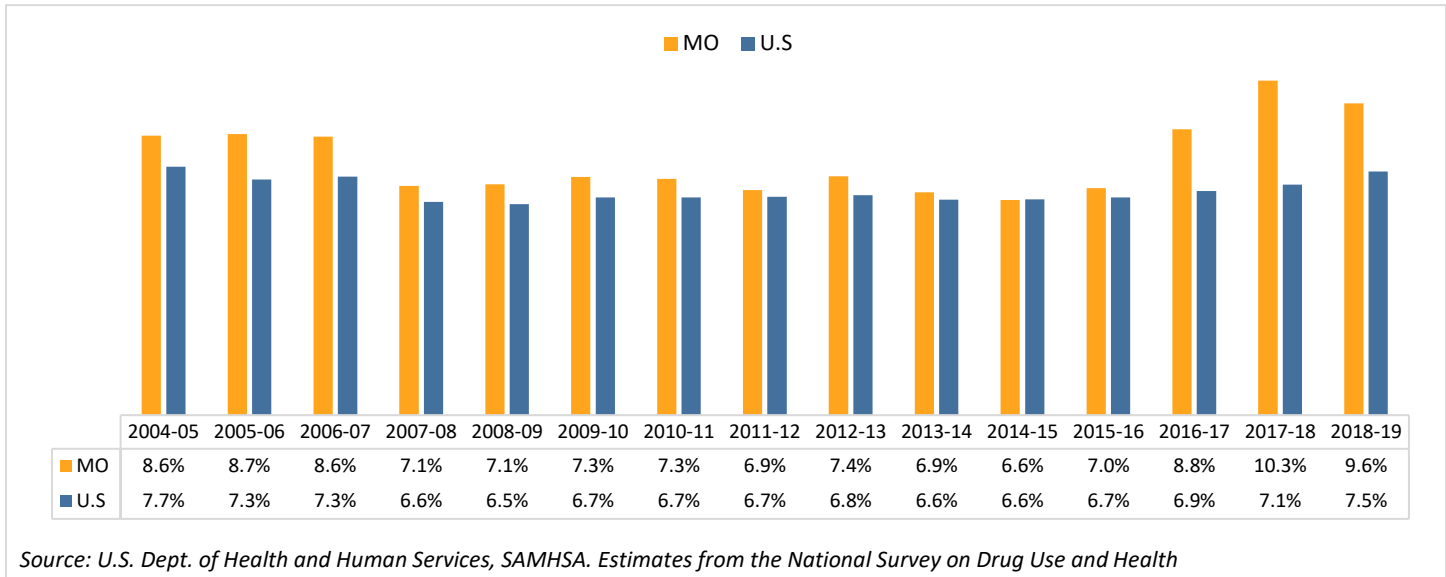
## Key Mental Health Indicators



## National Comparison

The percentage for having at least one major depressive episode are typically higher in Missouri than nationally. The percentage of Missouri adults aged 18 and more having at least one major depressive episode in the previous year was increasing since 2015-16 but in 2018-19, the number declined.

Figure 46: % of Adults Aged 18 and more Having at Least One Major Depressive Episode in the Previous Year: U.S. and Missouri, 2004-2019.



## Missouri Youth

According to the Missouri Student Survey<sup>4</sup>, 25.3% youth reported being sad, 33.4% felt grouchy, 32.6% were sleeping more than usual, and 32.1% were having difficulty concentrating, “often” or “always” during the past month. Further, 11.1% of the participants reported that they seriously considered suicide and 8.6% planned for suicide in the last year. Approximately, 4.9% of the youth actually attempted suicide.

Table 10: Number of Suicide Attempts in the Past Year (12 months), 2020

	0 times	1 time	2 or 3 times	4 or 5 times	6 or more times
How many times did you actually attempt suicide?	95.1%	2.8%	1.4%	0.2%	0.5%

Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2020) Missouri Student Survey Report.

<sup>4</sup> Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2018) Missouri Student Survey Report



Self-harm is defined as attempting to harm oneself on purpose in a deliberative, but not suicidal, way. While the majority of youth did not report any attempt of self-harm in their lifetime, 19% reported one or more incidents. Females (22.1%) were much more likely than males to report self-harm (15.0%). The most common method of self-harm was “cut, scratched or hit myself on purpose”.

Table 11: Students Reporting Lifetime Types of Self-Harm, 2020.

	Yes
<b>Cut, scratched or hit myself on purpose to hurt myself</b>	13.9%
<b>Pulled my hair or eyelashes</b>	3.5%
<b>Swallowed more medicine than a doctor told me to take to hurt myself</b>	1.9%
<b>Burned myself</b>	2.5%
<b>Used drugs or alcohol to hurt myself</b>	2.1%

Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2020) Missouri Student Survey Report.

### Treatment Data

Of the known diagnoses, Division of Behavioral Health: Psychiatric Services treats depressive mood disorders most commonly followed by anxiety disorders and fear disorders.

In 2019, psychiatric Services serve more females than males (FY 2019: Female= 43,084 Male= 40,179). The majority of clients are White, followed by African American. This distribution is similar to that of the state’s population in 2019 (Whites= 82.9% African American= 11.8%).<sup>5</sup> Most clients are referred by themselves, family or a friend.

The rate of inpatient hospitalizations for Affective Disorders was studied among the BRFSS regions in Missouri. In 2015, the rate of inpatient hospitalizations for Affective Disorders was highest in the St Louis Metro area (83.59 per 10,000) and lowest in Northeast region (43.30 per 10,000). This data has not been updated since 2015 (Division of Health and Senior Service: [MICA Database](#))

<sup>5</sup> <https://www.census.gov/acs/www/data/data-tables-and-tools/data-profiles/2019/> U.S. Census Bureau, 2015-2019 American Community Survey 5-Year Estimates

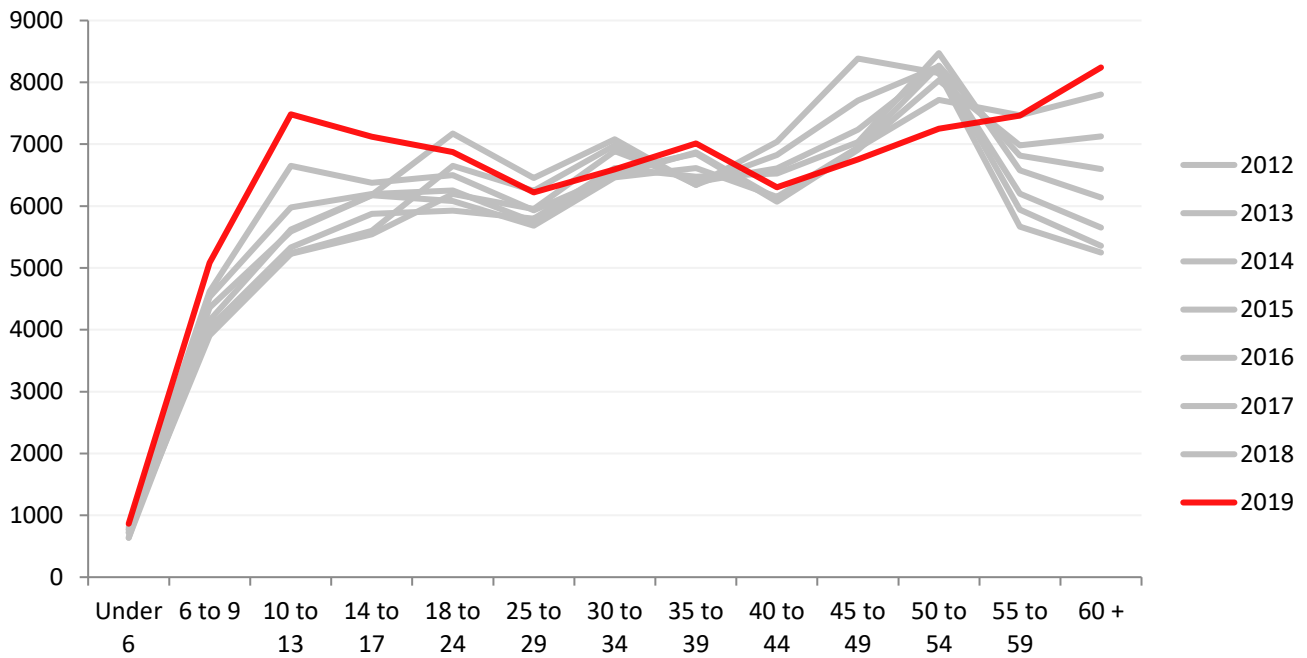
# STATE EPIDEMIOLOGY PROFILE- 2020

Table 12: Diagnoses of Clients Served by Comprehensive Psychiatric Services, 2011-19.

Diagnosis Category	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
<b>Anxiety and Fear Disorders</b>	13,402	14,386	14,901	16,704	18,465	18,623	19,293	20,073
<b>Bipolar Mood Disorders</b>	20,228	20,478	20,046	19,955	20,111	19,255	18,324	17,525
<b>Depressive Mood Disorders</b>	30,521	32,216	31,786	32,609	33,450	34,060	35,335	36,016
<b>Developmental and Age-Related Disorders</b>	11,382	11,807	11,454	11,573	12,668	12,680	12,743	12,787
<b>Impulse Control and Conduct Disorders</b>	5,242	5,568	5,453	5,594	7,218	7,215	7,338	7,249
<b>Personality Disorders</b>	9,413	9,440	9,168	9,093	8,857	7,840	7,23	6,672
<b>Schizophrenia and Psychotic Disorders</b>	15,081	15,129	14,844	14,743	16,065	15,624	15,224	15,005
<b>Sexual Disorders</b>	202	209	199	246	346	335	340	362
<b>Trauma Disorders</b>	13,811	14,718	14,749	15,492	17,160	17,744	18,637	19,183
<b>Disorder Not Elsewhere Categorized</b>	1,346	1,414	1,359	1,460	2,280	2,777	3,177	2,864
<b>Disorder Unknown</b>	3,503	3,295	3,264	3,535	2,854	3,001	3,959	4,834
<b>All Disorders</b>	74,171	75,913	74,814	75,452	76,402	77,972	80,284	83,264

Source: Division of Comprehensive Psychiatric Services -- Clinical Data. Missouri Behavioral Health Epidemiology Workgroup Website.

Figure 47: Number of Clients Served by Comprehensive Psychiatric Services, by Age Group, 2002-2019.



Source: Division of Comprehensive Psychiatric Services -- Clinical Data. Missouri Behavioral Health Epidemiology Workgroup Website.

## Mortality Rates due to Suicide

Missouri has been higher than the national average for rate of deaths due to suicide for the last decade. Men and Whites are much more likely to die due to suicide.

Figure 48: Rate of Death due to Suicide per 100,000 Pop: U.S. and Missouri, 1998-2019.

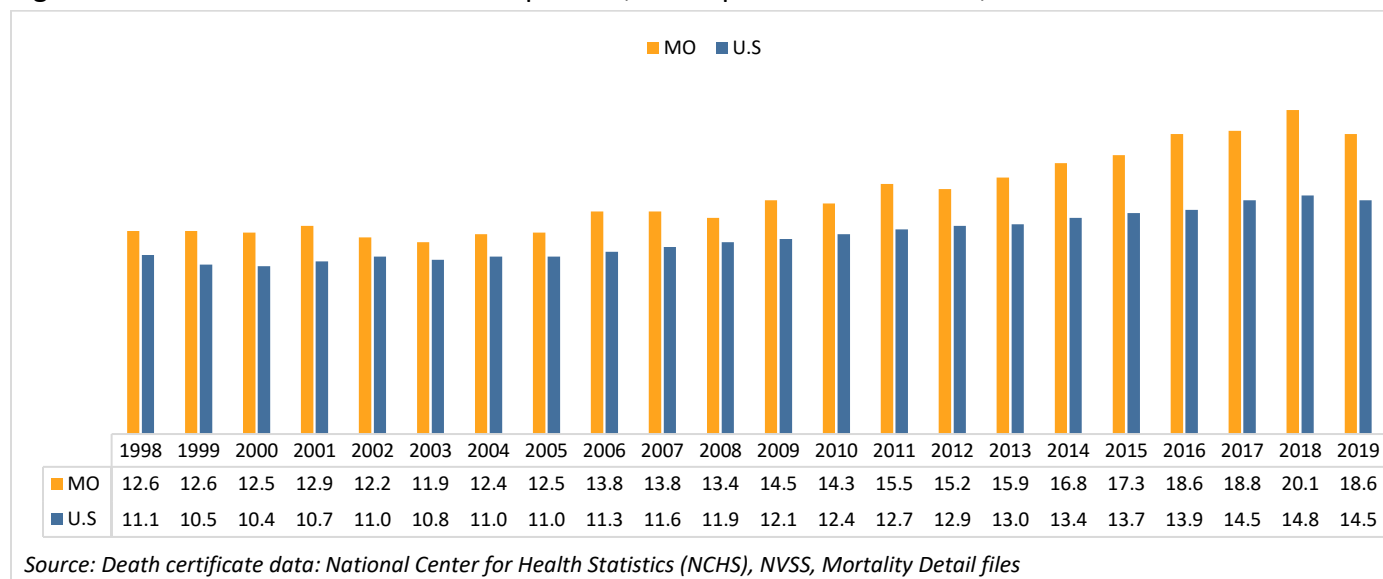
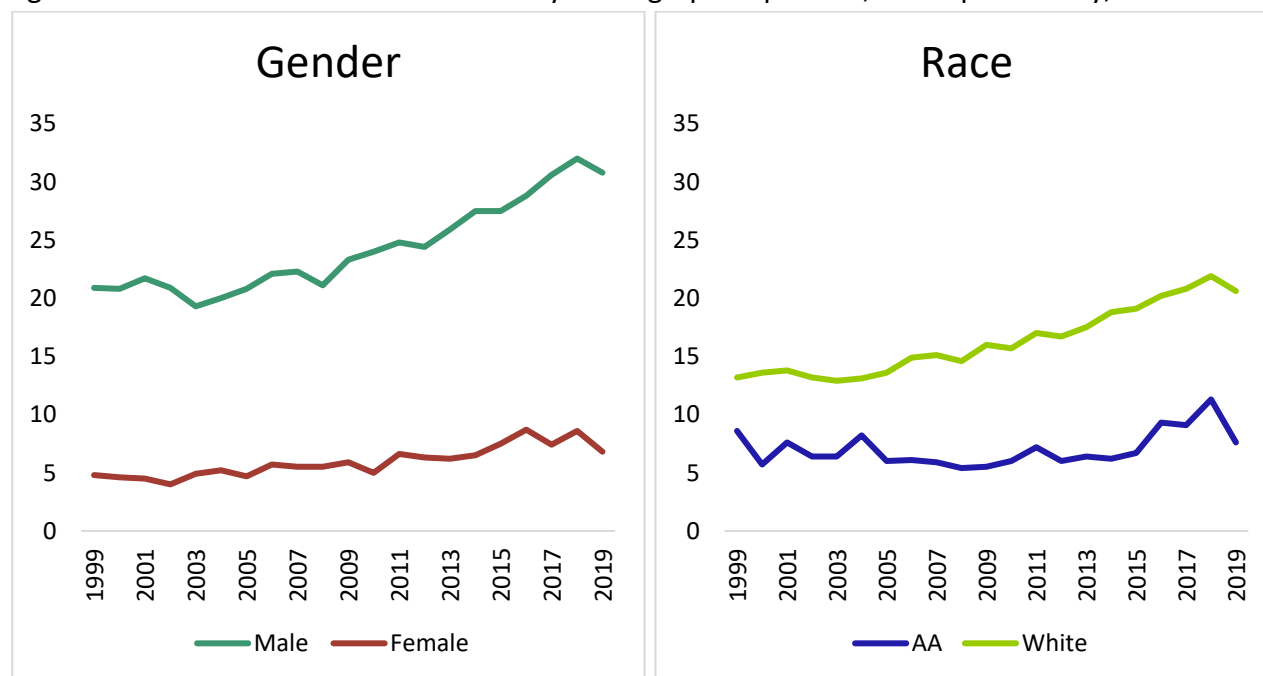


Figure 49: Rate of Deaths due to Suicide by Demographics per 100,000 Pop: MO only, 1998-2019.



## High Risk Subpopulations



## LGBTQ

Data on the LGBTQ population comes from the 2020 Missouri Student Survey (MSS). Questions about sexual orientation and gender identity are part of an optional module of the MSS. Schools register prior to the survey administration and schools may opt out of participating in the optional modules.

Therefore, the data is not necessarily representative of Missouri.

### Substance Use Indicators

LGBTQ students consistently reported higher percentage of using alcohol, E-Cigarettes, Marijuana, Cigarettes, and Hookah over the past 30 days than their non-LGBTQ peers. Among all the substances, past-month use of E-Cigarettes was most common among LGBTQ youth (30%) and past-month alcohol use was most common among the heterosexual youth (16.8%). Prescription drugs, without a doctor's prescription, was more commonly used by the heterosexual youth than the LGBTQ peers.

Table 14: Past 30-Day Substance Use, by Sexual Orientation, 2020.

	% LGBTQ	% Heterosexual
<b>Alcohol</b>	24.4%	16.8%
<b>E-Cigarettes</b>	30.0%	15.1%
<b>Marijuana</b>	15.4%	8.8%
<b>Prescription Drugs</b>	3.8%	6.4%
<b>Cigarettes</b>	10.5%	5.2%
<b>Hookah</b>	8.7%	1.8%
<b>Over-the-Counter Drugs</b>	1.7%	2.0%
<b>Inhalants</b>	0.0%	1.0%
<b>Synthetic Drugs</b>	0.0%	0.6%

Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2020) Missouri Student Survey Report.

### Mental Health Indicators

Students who identified as LGBTQ are much more likely than students identifying as heterosexual to report having suicidal thoughts and attempting suicide. The percentage of LGBTQ suicide attempts (18.1%) was nearly five times the rate in heterosexual students (4.6%)

Table 15: Suicidality, by Sexual Orientation, 2020.

	% LGBTQ	% Heterosexual
<b>Considered suicide</b>	44.2%	10.3%
<b>Made a plan to attempt suicide</b>	27.1%	8.2%
<b>Attempted suicide</b>	18.1%	4.6%

Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2020) Missouri Student Survey Report.

Similarly, many more LGBTQ students reported experiencing symptoms of depression than heterosexual students. Over half of LGBTQ students reported feeling very sad (55%), feeling grouchy or irritable (50.7%), experiencing changes in sleep patterns (53%), and having difficulty concentrating on schoolwork (49.4%) “often” or “always” during the past month.

Table 16: Symptoms of Depression in the Past Month, by Sexual Orientation, 2020.

	% LGBTQ	% Heterosexual
<b>Felt very sad</b>	55.0%	24.5%
<b>Felt grouchy or irritable</b>	50.7%	33.0%
<b>Felt hopeless about the future</b>	32.6%	15.1%
<b>Felt like not eating or eating more than usual</b>	37.9%	20.7%
<b>Slept a lot more or a lot less than usual</b>	58.4%	32.0%
<b>Had difficulty concentrating on school work</b>	49.4%	31.7%

Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2020) Missouri Student Survey Report.

### Bullying and Violence

LGBTQ youth experienced bullying at higher rates than heterosexual students. 77.6% of LGBTQ youth had been made fun of, compared to 55.5% of heterosexual students. Also, 65.2% of LGBTQ students had rumors or lies spread about them at school compared to 43.1% of heterosexual students. LGBTQ youth were also more likely to experience physical and online bullying.

Table 17: Bullying in the Past 3 Months, by Sexual Orientation 2020.

	% LGBTQ	% Heterosexual
<b>Made fun of you</b>	77.6%	55.5%
<b>Spread mean rumors or lies about you at school</b>	65.2%	43.1%
<b>Posted something online or sent a text that embarrassed or hurt you</b>	47.8%	25.0%
<b>Hit, shoved or pushed you and was not just fooling around</b>	36.6%	18.6%

Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2020) Missouri Student Survey Report.

When compared to the heterosexual youth, the percentage of LGBTQ students who were threatened or injured with a weapon on school property was higher.

Table 18: Experiencing Violence in the Last Year, by Sexual Orientation, 2020.

	% LGBTQ	% Heterosexual
<b>In a physical fight</b>	16.0%	15.9%
<b>In a physical fight in which you were injured and had to be treated by a doctor or nurse</b>	0.2%	2.5%
<b>Threatened or injured with a weapon such as a gun, knife, or club on school property</b>	15.1%	6.5%

Source: Depue, S, Kryah, R, VonDras, S, & Sale, E (2020) Missouri Student Survey Report.

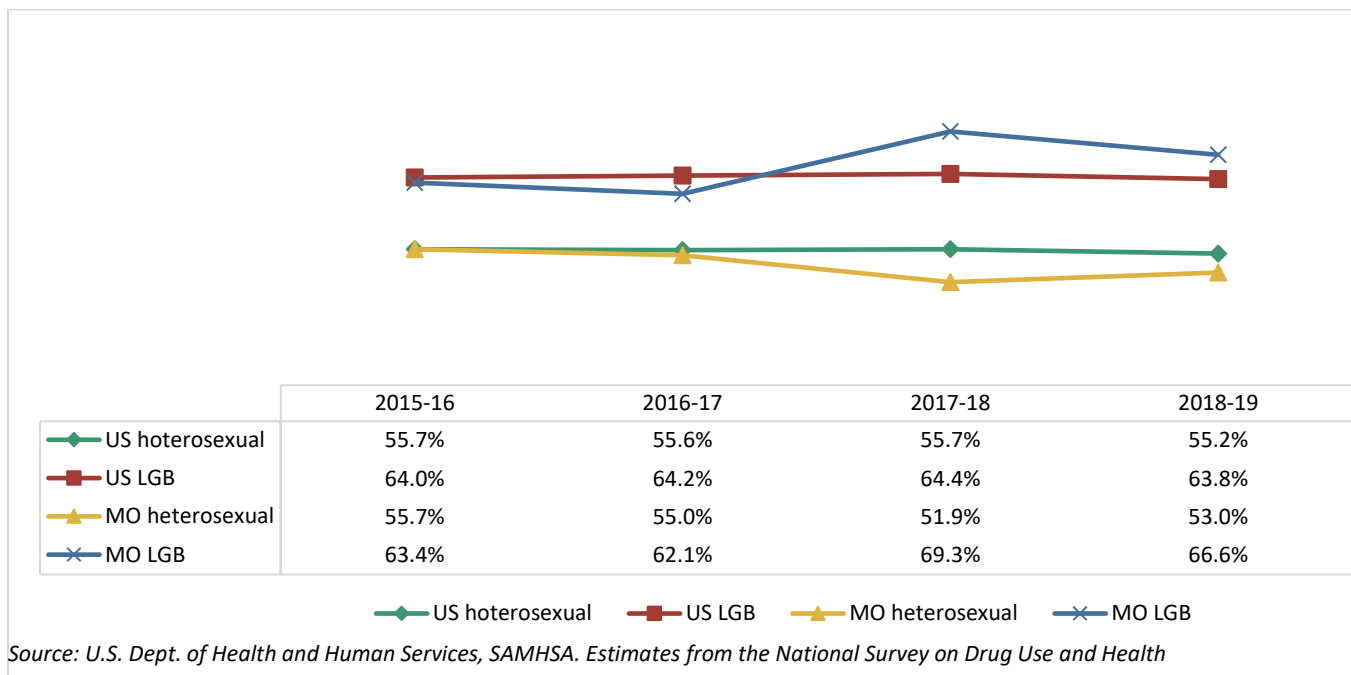


## Substance Use among US and MO Adults (LGB and heterosexual) 18 years and older

In 2015, NSDUH data included question on sexual identity. The question is worded as “Which one of the following do you consider yourself to be: 1. Heterosexual, that is, straight; 2. [Lesbian or] Gay; 3. Bisexual”. This question was recoded in the [NSDUH data analysis tool](#) to combine Lesbian, Gay, and Bisexual (LGB) to study the difference of this population from heterosexual adults of US and Missouri.

As compared to heterosexual population, the past-month alcohol use is higher among the LGB population in US and MO. In 2017-18, an increase is seen among MO LGBs and a decline is observed for MO heterosexual population. In 2018-19, alcohol use is lower for heterosexual adults in MO than in the US heterosexual adults, but the use is higher for LGBs in MO than the national average.

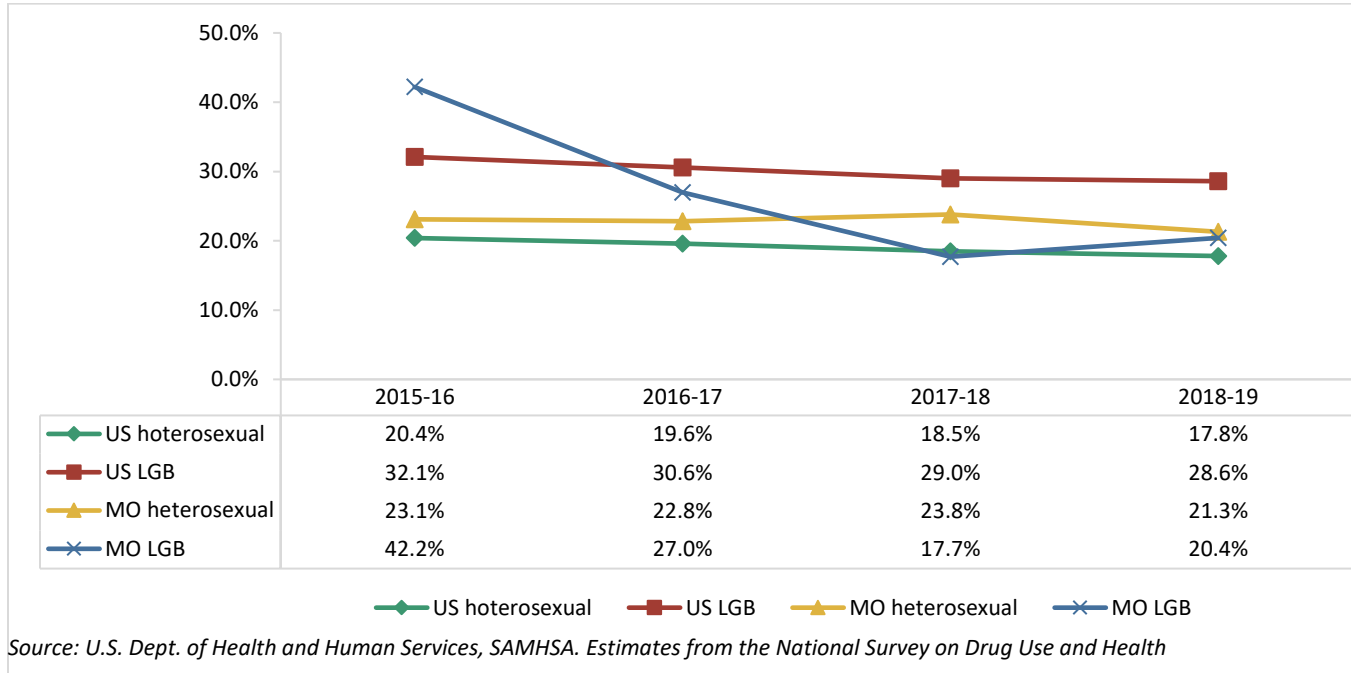
Figure 50: % of heterosexual & Lesbian, Gay, Bisexual (LGB) who have used alcohol in last 30 days, 2015-2019.



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In 2018-19, the past-month cigarette use is highest LGB adults in US and is the lowest among US heterosexual adults. A sharp downward trend is seen for MO LGB population; the past-month cigarette use is almost half in 2018-19 when compared to 2015-16.

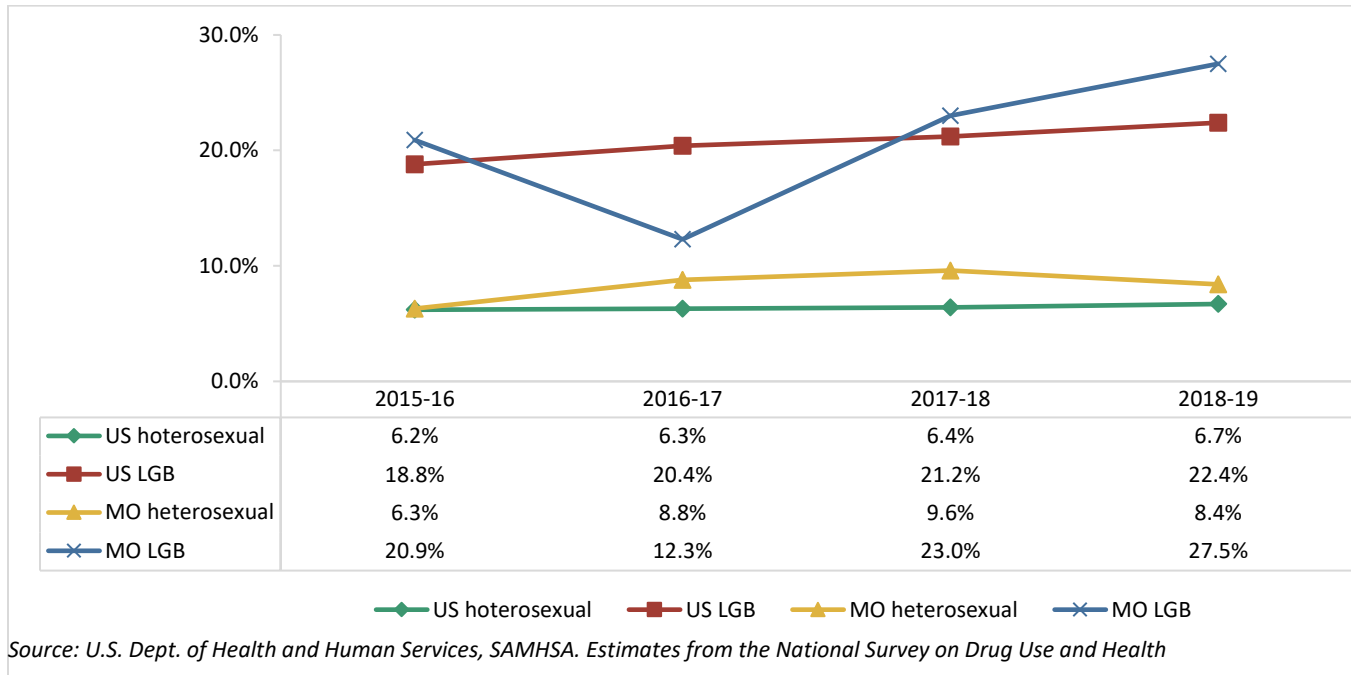
Figure 51: % of heterosexual & Lesbian, Gay, Bisexual (LGB) who have used cigarettes in last 30 days, 2015-2019.



## STATE EPIDEMIOLOGY PROFILE- 2020

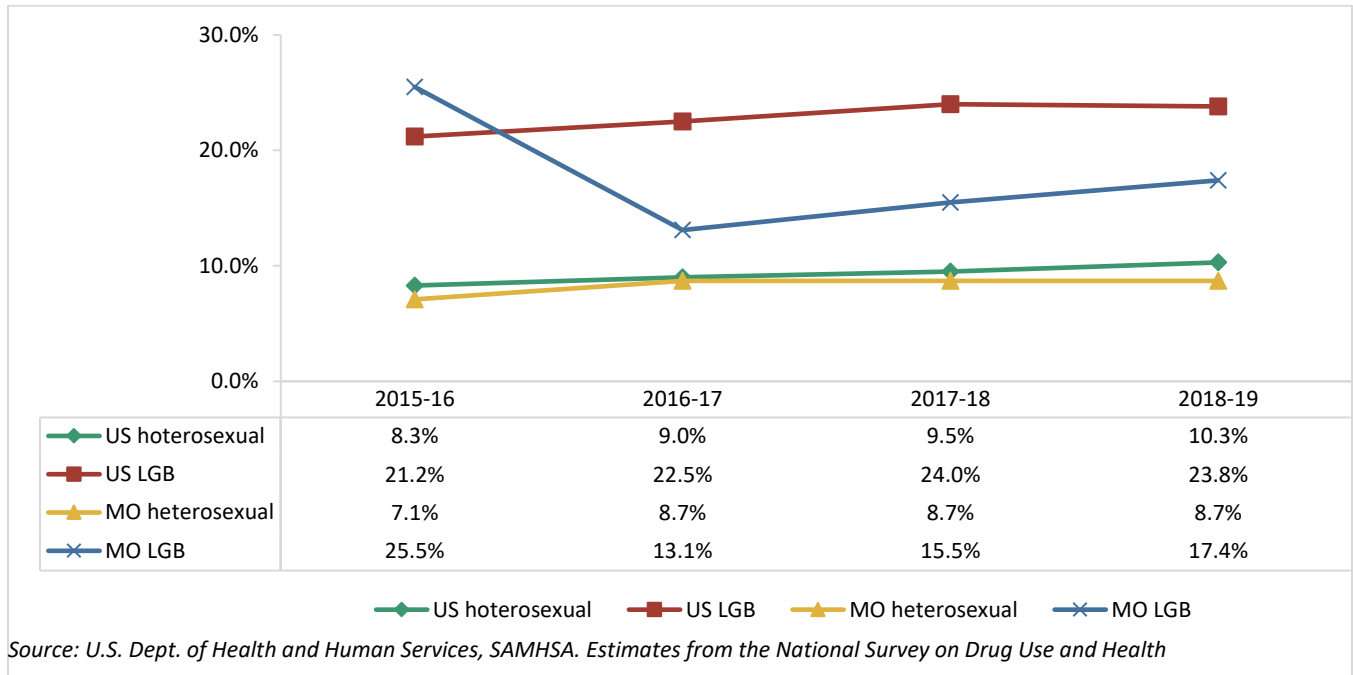
A higher percentage of LGB population is seen to have a major depressive episode last year and the percentage is higher for Missouri than national average in 2018-19. A sharp decline and increase is seen among the same population in 2016-17 and 2017-18 respectively.

Figure 52: % of heterosexual & Lesbian, Gay, Bisexual (LGB) adults who had a major depressive episode in last year, 2015-2019.



Past-month marijuana use is higher among the LGB population in US and in Missouri. The percentage of use is lower in MO than national average. A sharp decline in use among US LGB adults is observed in 2016-17 after which the percentage gradually increased.

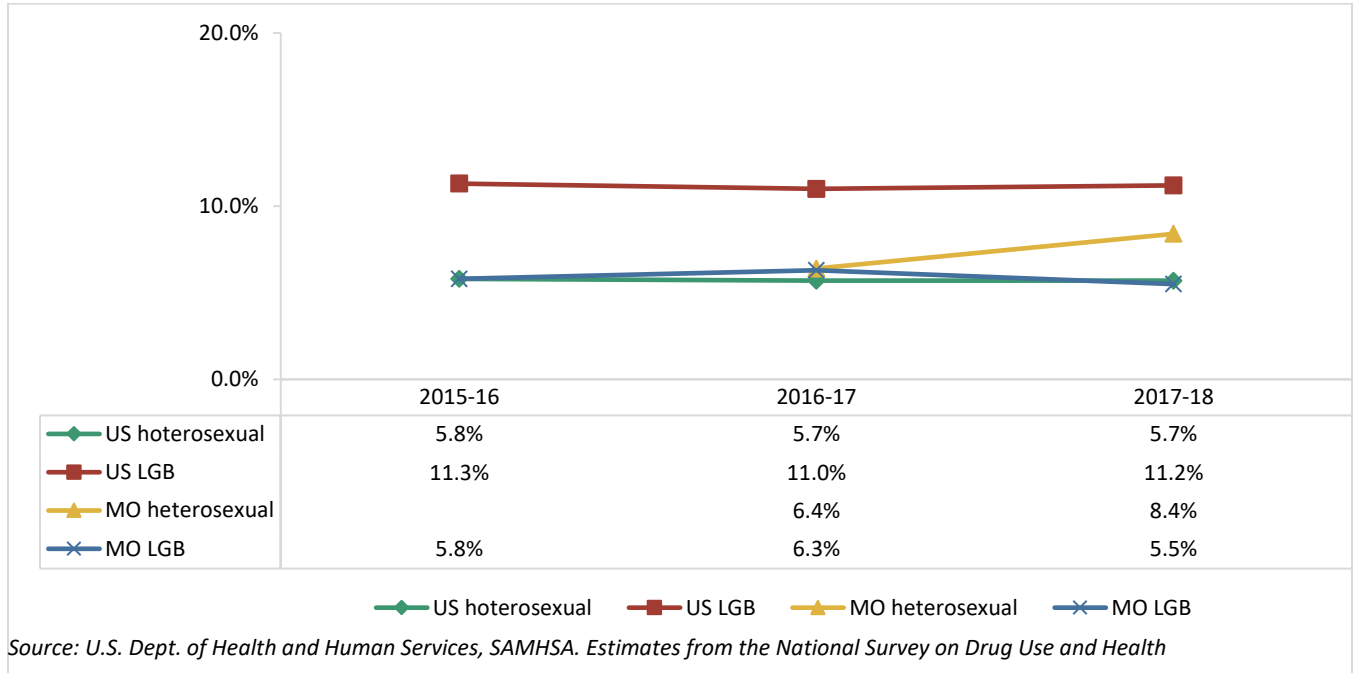
Figure 53: % of heterosexual & Lesbian, Gay, Bisexual (LGB) who have used marijuana in last 30 days, 2015-2019.



## STATE EPIDEMIOLOGY PROFILE- 2020

In 2018-19, US LGB adults had highest percentage for ever-used methamphetamine and lowest percentage was among US heterosexual and MO LGB adults. A sharp increase is seen among MO heterosexual population in 2018-19

Figure 54: % of heterosexual & Lesbian, Gay, Bisexual (LGB) who have ever used methamphetamine, 2015-2019.



## Military Personnel

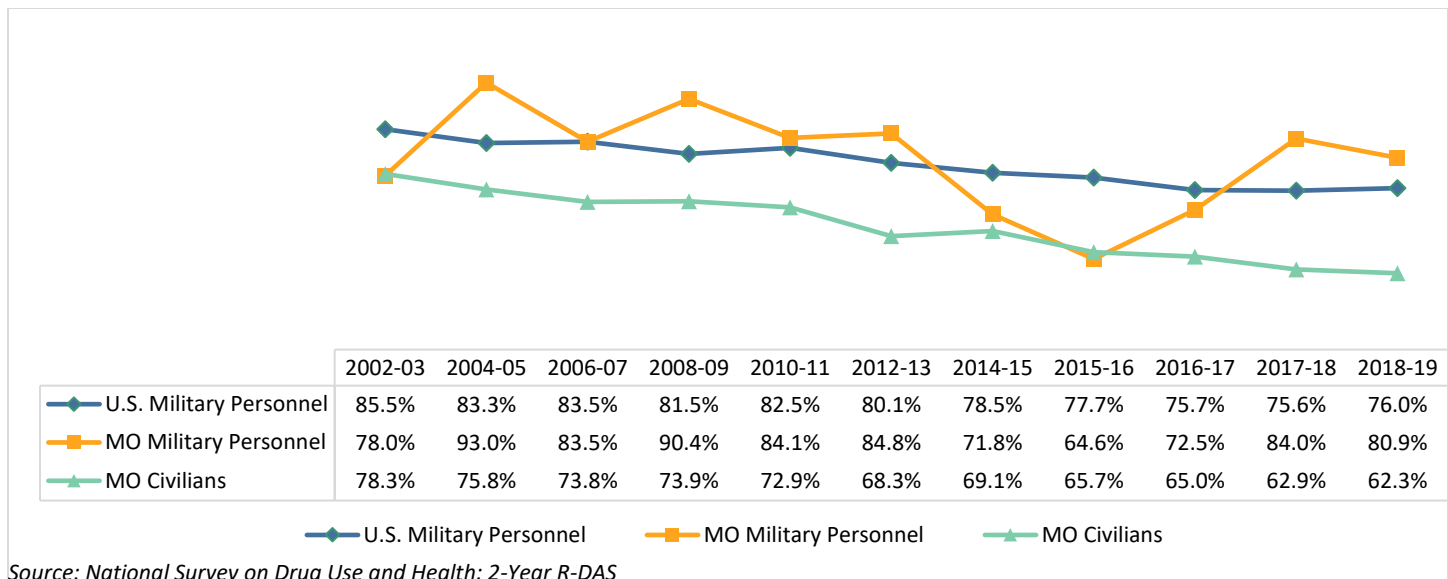
Data on military personnel are available from NSDUH. While there is a wealth of data regarding tobacco use among military personnel, data on drugs and mental illness are more limited. Where possible, Missouri military personnel are compared to both military personnel nationally and Missouri civilians. Unless otherwise indicated, numbers in this section are representative of both active and inactive military personnel, including veterans.

## Tobacco Use

In 2018-19, the percent of Missouri military personnel who have ever smoked a cigarette was higher than the U.S. military personnel.

In Missouri, the percent of military personnel and civilians who have ever smoked a cigarette declined from previous year.

Figure 55: % of Military Personnel (U.S. and Missouri) & Civilians (Missouri) who have Ever Smoked a Cigarette, 2002-2019.

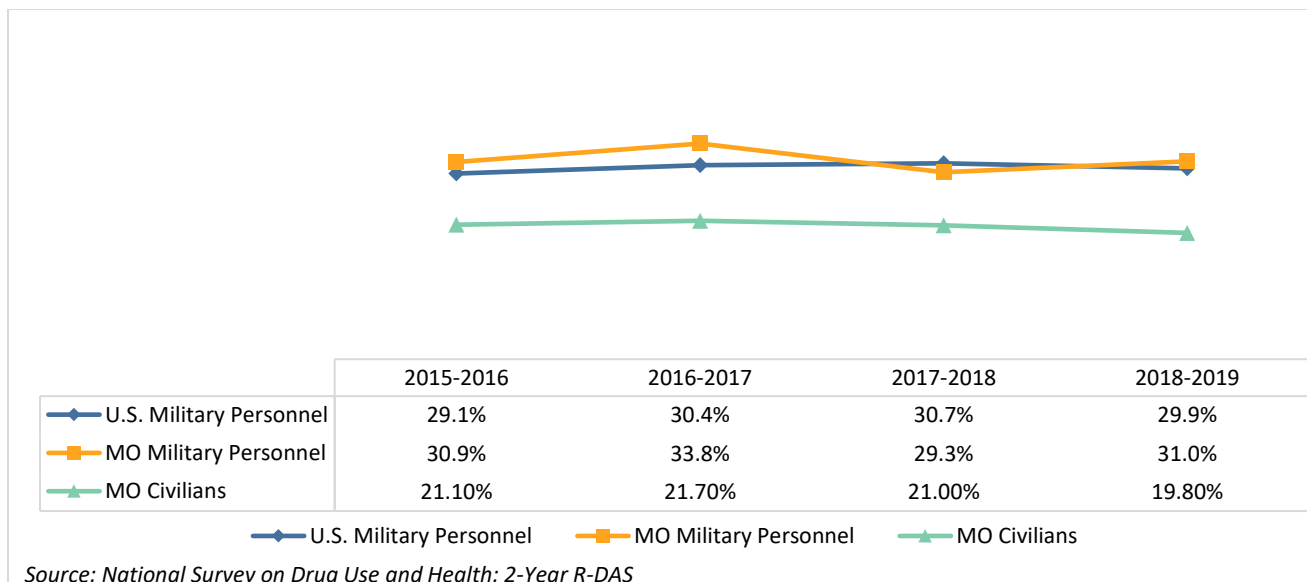


Source: National Survey on Drug Use and Health: 2-Year R-DAS

Prior to 2015, NSDUH comprised of separate questions for chewing tobacco and snuff. In 2015, the NSDUH replaced these questions with questions about smokeless tobacco in general. Smokeless tobacco includes snuff, dip, chewing tobacco or snus. Therefore, numbers about smokeless tobacco are reported after 2015 for a comparison.

Compared to U.S. Military personnel, the percentage of MO military personnel who ever used smokeless tobacco was slightly higher. Military personnel, in general, use smokeless tobacco at a higher rate than the civilians. Further, the percentage among civilians is declining since 2015.

Figure 56: % of Military Personnel (U.S. and Missouri) & Civilians (Missouri) who have Ever Used Smokeless Tobacco, 2015-2019.

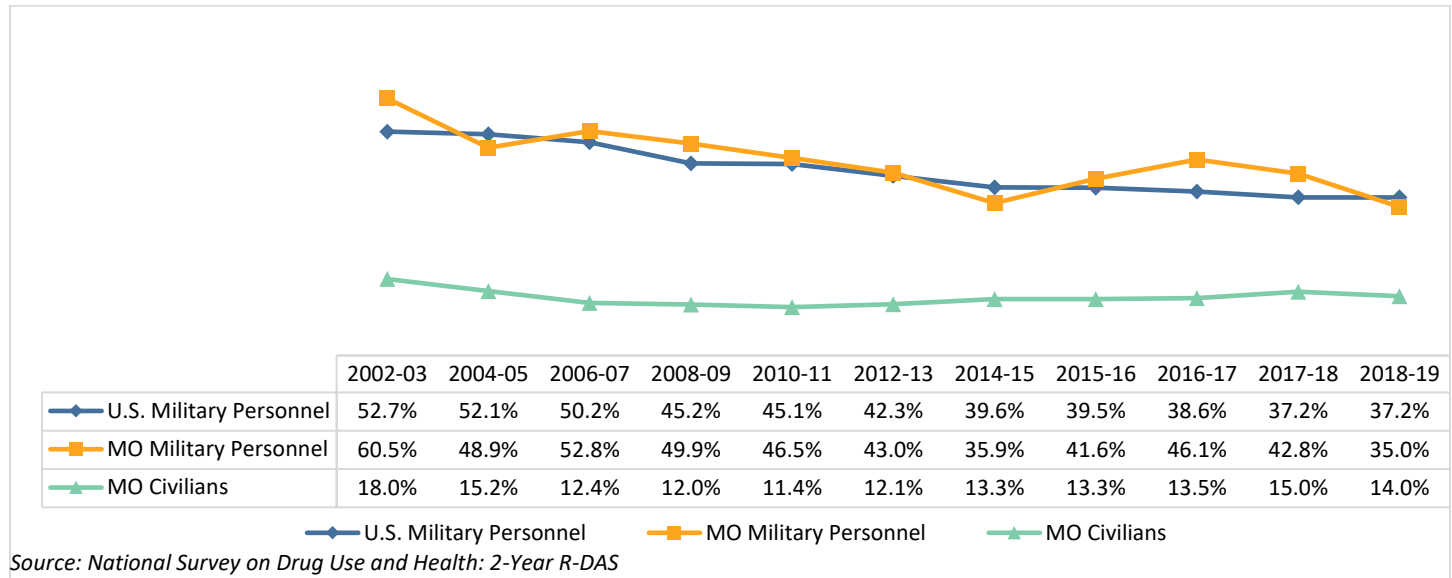


Source: National Survey on Drug Use and Health: 2-Year R-DAS

## STATE EPIDEMIOLOGY PROFILE- 2020

As with other tobacco products, military personnel tend to use pipe tobacco at a higher rate than civilians. Pipe tobacco rates for US military personnel have decreased slightly over time. On contrary, the percentage among MO military personnel increased from 2014-17 to 2016-17 and then declined.

Figure 57: % of Military Personnel (U.S. and Missouri) & Civilians (Missouri) who have Ever Smoked Pipe Tobacco, 2002-2019.

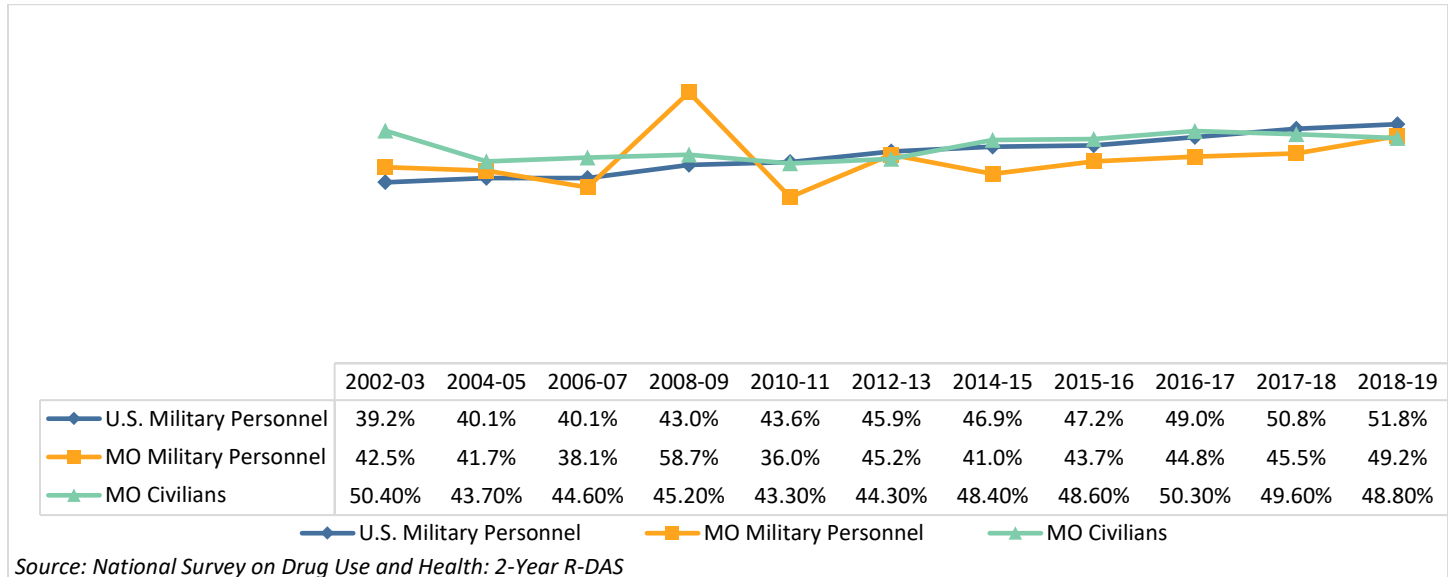




## Marijuana

Except for a peak in 2008-2009 among MO military personnel, percentage for marijuana use have increased relatively steady among all groups. However, the use among MO civilians decreased in 2018-19.

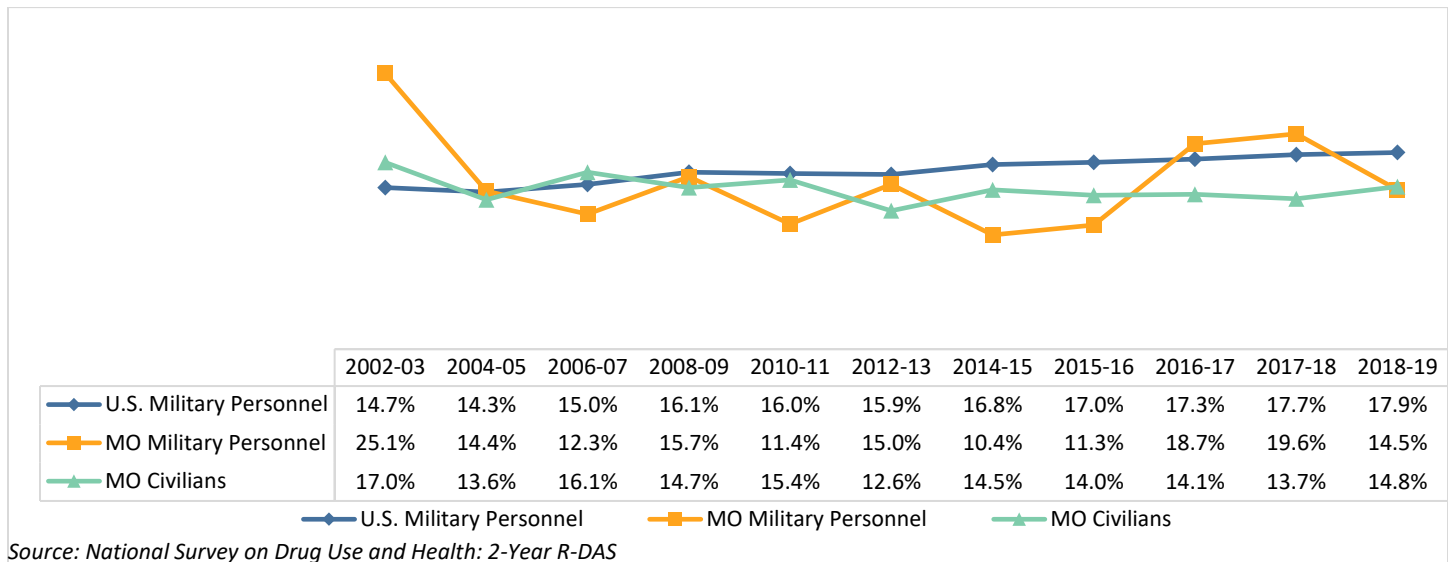
Figure 58: % of Military Personnel (U.S. and Missouri) & Civilians (Missouri) who have Ever Used Marijuana / Hashish, 2002-2019.



## Illicit Drugs Other than Marijuana

The percentage of cocaine use has steadily increased among US military personnel. The use among MO military shows sharp increases and declines. With a spike in 2016, the use of cocaine among MO military remained more than the use among US military but declined again in 2018-19. For the past few years, the use was declining for MO civilian population, but it increased in 2018-19.

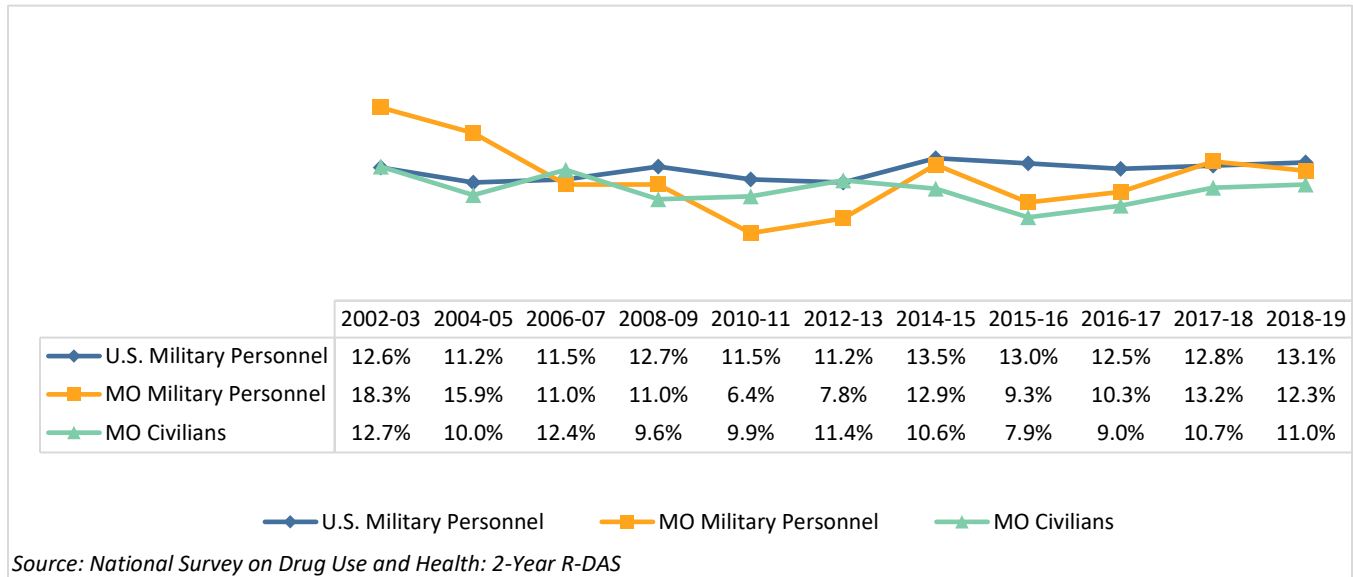
Figure 59: % of Military Personnel (U.S. and Missouri) & Civilians (Missouri) who have Ever Used Cocaine, 2002-2019.



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In Missouri, the percent of military personnel who have ever used LSD declined in 2018-19. The use is increasing among MO civilians since 2016-2017. Currently, more military personnel reported ever using LSD than civilians in Missouri.

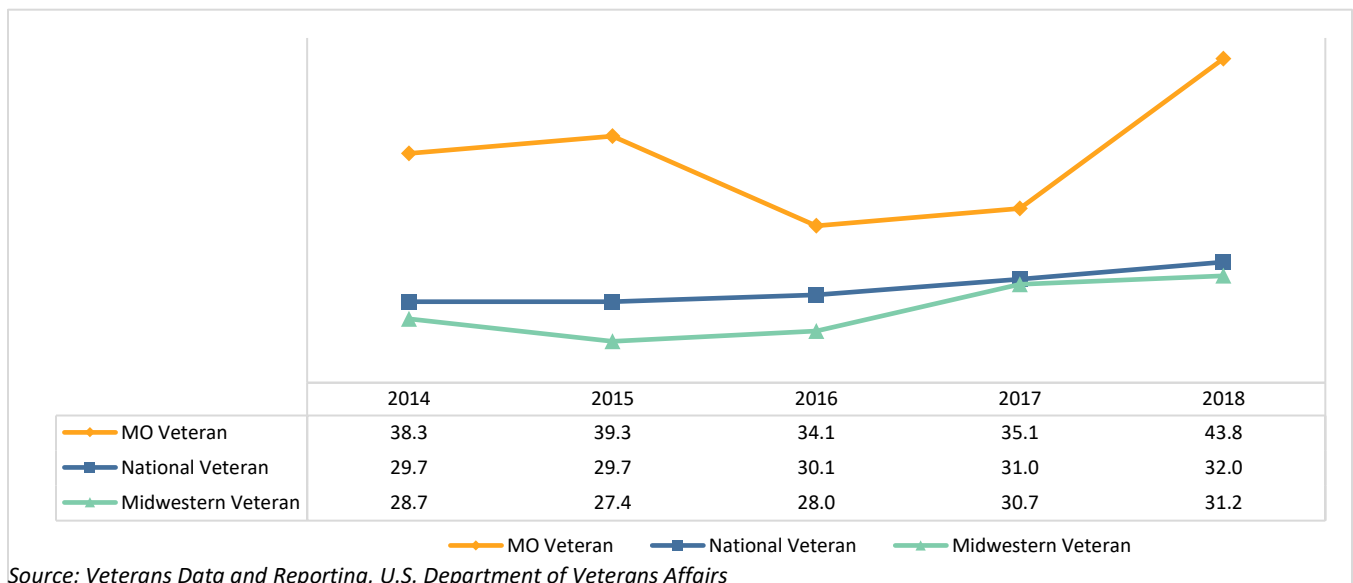
Figure 60: % of Military Personnel & Civilians who have Ever Used LSD, in Missouri, 2002-2019.



### Mental Health Indicators

According to US Department of Veterans Affairs, the suicide rates among MO veterans were significantly higher than the suicide rates among midwestern veterans, national veterans and national general population. The suicide rate in midwestern region and US is almost similar in 2017 and 2018. A sharp increase in suicides is observed among MO veterans in 2018.

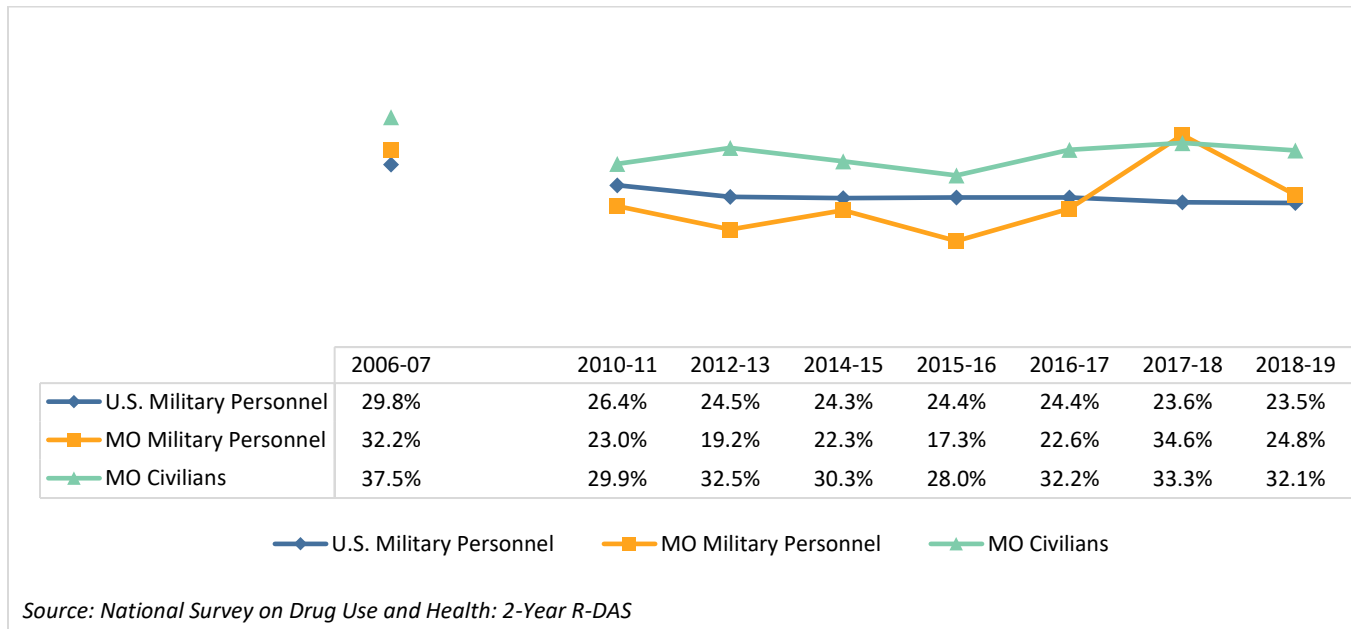
Figure 61: Rate of suicide per 100,000 among veterans in US, Missouri, and Midwestern Region, 2014-2018



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The percentage military personnel in US and Missouri feeling sad, empty, or depressed for several days or longer is lower than that of the Missouri civilian population. A spike was observed for the percentage among MO military personnel. In 2018-19, the percentages are very similar for US and MO military personnel. Data were unavailable for the years between 2007 and 2010.

Figure 62: % of Military Personnel Who Felt Sad/Empty/Depressed for Several Days or Longer, in U.S. and Missouri, 2006-2019.



## STATE EPIDEMIOLOGY PROFILE- 2020

The percentage Missouri military personnel who received any mental health treatment in the past year is higher for MO civilians than the military personnel in MO or U.S. A spike in percentage of MO Military personnel was seen in 2016-17 and has been declining ever since.

Figure 63: % of Military Personnel Who received any mental health treatment in the past year, in U.S. an Missouri, 2010-2019.

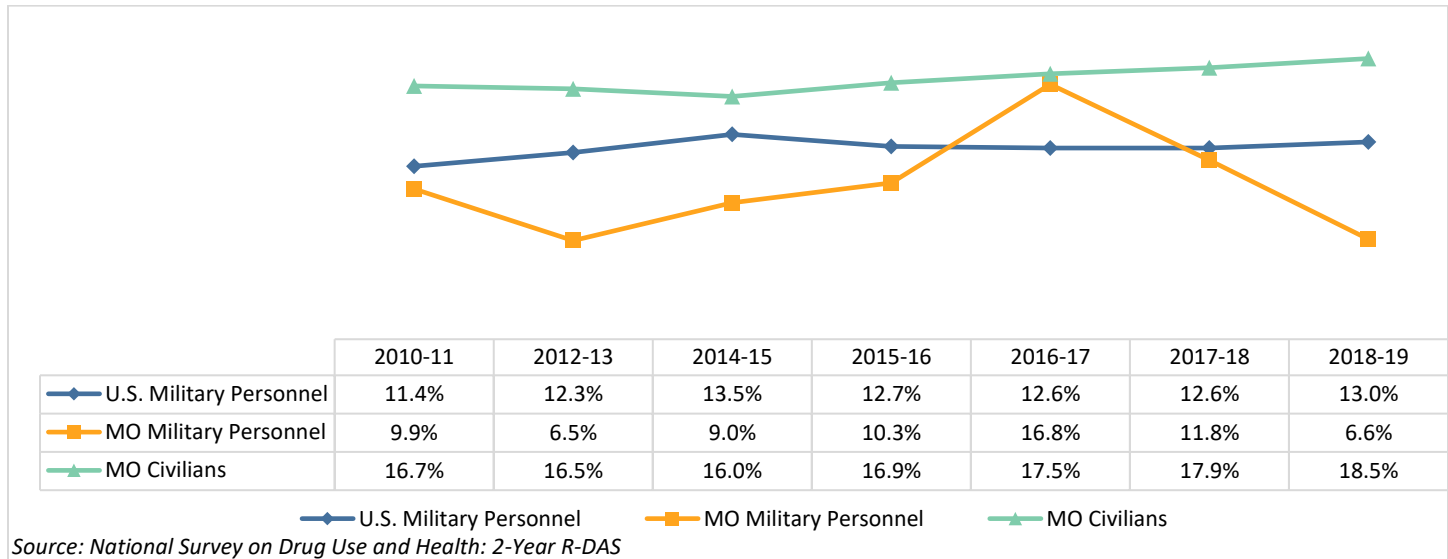


Table 19: Percentage of US veterans, 20 years and older, feeling sad, hopeless, worthless, and that everything is an effort, 2015-2018

	Felt sad all or most of the time^	Felt hopeless all or most of the time^	Felt worthless all or most of the time^	Felt that everything is an effort all or most of the time^
<b>Overall</b>	2.4%	1.8%	2%	5.6%
<b>County of Residence<sup>&amp;</sup></b>				
Urban	2.3%	1.8%	1.9%	5.5%
Rural	2.7%	2.1%	2.1%	6.1%
<b>Region</b>				
Northeast	2%	0.8%	1.1%	3.7%
Midwest	1.8%	1.9%	2%	5%
South	2.3%	1.7%	1.7%	6%
West	3.3%	2.7%	2.9%	6.8%

Source: Veterans Health Statistics Table, CDC. (NCHS National Health Interview Survey, 2015-18)

^ In four separate questions, respondents were asked how often in the past 30 days they felt: so sad that nothing could cheer them up, hopeless, worthless, or that everything was an effort. Respondents could choose from among five response categories: "All of the time," "Most of the time," "Some of the time," "A little of the time," or "None of the time." For this table, "All" and "Most" are combined. The weighted percentages of unknown with respect to feelings of sadness, hopelessness, worthlessness, and everything was an effort among adults aged 20 and over were 3.3%, 3.3%, 3.4%, and 3.4%, respectively.

& County of residence was classified as urban or rural based on the 2013 NCHS Urban-Rural Classification Scheme for Counties.

## DATA LIMITATIONS AND GAPS

This report attempts to provide an overview of the state of Missouri's behavioral health data. However, due to limitations in the data available and resources to write the report, there are gaps that remain.

For example, the risk and protective factors and in-depth mental health data for youth lack high quality and national comparable data sources. Therefore, local data are used to explore these variables in order to have some indication of their current status in Missouri. Some inferences can be made with local data but should be interpreted cautiously. Additionally, methodological issues may cause some variability with the data that is not a true reflection of population. Therefore, the lack of comparable numbers from other states and national level data makes it difficult to determine the relative magnitude of the issues in Missouri.

Another concern that needs to be taken into consideration is the use of risk and protective factors as defined by the Hawkins and Catalano Model, which only allows for middle and high school students to be examined with a single data source. This does provide a starting point; however, further efforts will have to be made to determine which risk and protective factors play a role in influencing the behavioral health of people across the lifespan.

Data quality of Missouri Student Survey was improved in 2016 with the introduction of a random sample at the state level; however, response rates are slightly less than desired.

Data on consequences are available at the state level from the national data set and are included in this report. However, stakeholders would like data on the cost to the state for each variable, but that data is currently unobtainable.

Data shows that individuals 18-21 and 21-25 years of age are the heaviest users for alcohol, tobacco, and other drugs so subpopulation data for these age groups would be most helpful. However, those ages 18-21 are not legally allowed to drink which raises concerns for this group's ability to access these substances. Additionally, subpopulation data would also be helpful for the high-risk subpopulations the MO-BHEW identified in 2013: 1) military personnel, 2) homeless, 3) persons with a disability, and 4) LGBTQ individuals. The MO-BHEW was able to obtain some Missouri data for LGBTQ and veterans/military and is currently in the process of exploring data sources for disabled persons and homeless individuals. Current data for LGBTQ youth is limited to a small sample from the Missouri Student Survey.

## CONCLUSIONS

Alcohol and tobacco are the two most commonly used drugs in Missouri and the overall past-month usage rates for cigarette is higher in Missouri than the national average. Binge drinking is common among those aged 18-25 years. Although past-month binge drinking is similar in Missouri and US, the use raises concerns about risky drinking and the associated consequences like cirrhosis and traffic crashes. Overall, the past month alcohol use in the state has remained relatively stable and lower than the national average.

Although the percentage of past-month usage for cigarettes is higher in Missouri than the national average, it has been declining since 2012. The past month cigarette use has been higher among Missourians aged 18-25 years. The past-month tobacco use among pregnant women has been higher in Missouri and the trend is declining since 2012. The consequences of tobacco use were studied- lung cancer, COPD and emphysema, and Cardiovascular and Ischemic Cerebrovascular Disease. The rates have been higher among Missourians and white population.

The nonmedical use of pain relievers has been similar to the national average and declined in 2018-19, both nationally and state-wide. Among Missourians, the use has been highest among those aged 18 to 25 years. The mortality due to prescription drug use and drug overdose/poisoning has been high in Missouri than the nation and have been increasing over the past decade. Although, mortality cannot be attributed to one single drug, data suggests that a spike, observed in 2016, may primarily be due to fentanyl. The use of marijuana has been slowly increasing and is lower in the state than national average. Those 18-25 tend to have the highest use rates across all drugs.

When examining the risk and protective factors, over one-third of all youth surveyed found drinking alcohol to be of “no risk” or “slight risk”, much more than that of cigarette smoking. Approximately 50% of Missouri youth believed that over the counter drugs, e-cigarettes, and alcohol were either “very easy” or “sort of easy” to obtain. Compared to other drugs, a greater percentage of youth believed it was “not wrong at all” to use alcohol or marijuana.

When examining the mental health variables that have nationally comparable numbers, past-year major depressive episode and suicide mortality are larger problems in the state than is average for the nation. White males are the most vulnerable to suicide mortality.

Finally, the MO-BHEW identified two high-risk subpopulations with data on mental health and substance use: LGBTQ individuals and military personnel. LGBTQ students are more likely than the heterosexual peers to use substance; approximately twice more likely to use e-cigarettes, marijuana, cigarettes and hookah; however, prescription drug use is lower. LGBTQ students are also more likely to experience symptoms of depression. Moreover, they are at a much higher risk of suicidality ((more than twice) and being bullied.



Missouri military personnel are more likely than MO civilians and military personnel nationally to use cigarettes. The use of other tobacco products (pipe and smokeless tobacco) is comparable to national military personnel. Missouri military personnel usage of marijuana and LSD is similar to MO civilian and American military personnel rates. The rate of suicide is higher among Missouri veterans than national or midwestern veterans. Missouri military personnel are similar to US military in feeling sad, empty, or depressed for several days or longer. This rate is lower than that for MO civilians.

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# STATE EPIDEMIOLOGY PROFILE- 2020

## Appendix A - Data Sources, Indicators and Selection Criteria

### Data Sources

Table 24: Data Sources

Name of Survey	Frequency of Reporting	Mode of Data Collection	Group Surveyed	Level Data Reported
<b>Behavioral Risk Factor Surveillance System (BRFSS)</b>	Annual	Telephone interview	Ages 18 or older, includes veterans	National, state, and Missouri Department of Health and Senior Services planning regions
<b>National Survey on Drug Use and Health (NSDUH)</b>	Annual	Face-to-face interview	Ages 12 or older, includes veterans	National but can also obtain state and sub-state planning regions by combining multiple survey years
<b>Missouri Student Survey (MSS)</b>	Every even numbered year	Web-based at school	Grades 6th - 12th but emphasis on 9th grade	State and county
<b>Youth Risk Behavior Survey (YRBS)</b>	Every odd-numbered year	Paper questionnaire at school	9th through 12th	National and State
<b>National Vital Statistics System Mortality (NVSS-M)</b>	Annual	Death certificate data	Population level	National and State – see Appendix A for more information
<b>U.S. National Institutes of Health, NIAAA.</b>	Annual	Multiplying national, State, or regional beverage volume by the corresponding ABV and dividing by the national, State, or regional population ages 14 and older	Ages 14 and older	Per capita ethanol consumption for States, census regions, and the United States
<b>Comprehensive Psychiatric Services Data</b>	Annual			State and county

**Mortality Data**

Note that the following ICD-10 codes were used to define the mortality categories. Data can be queried at <http://wonder.cdc.gov/ucd-icd10.html>.

Cardiovascular and Ischemic Cerebrovascular Disease	I20–I25 and I60-69, I00-I09, I11, I13, I26-I51(exclude I32, I39, I41)
Chronic Liver Disease & Cirrhosis	K70, K73-K74
COPD And Emphysema	J43-J44
Drug Related Behavior	F11- F16, F18-F19, F55 and G62
Drug Related Poisoning	X40-X44, X46, X60-X64, X66, Y10-Y14 and Y16
Homicide	X85-Y09 and Y87.1
Lung Cancer	C34
Suicide	X60-X84 and Y87.0
Prescription Drugs	T36-T39, T40.2-T40.4, T41-T43.5, and T43.8-T50.8 [prescription OPR (T40.2-T40.4), benzodiazepines (T42.4)]